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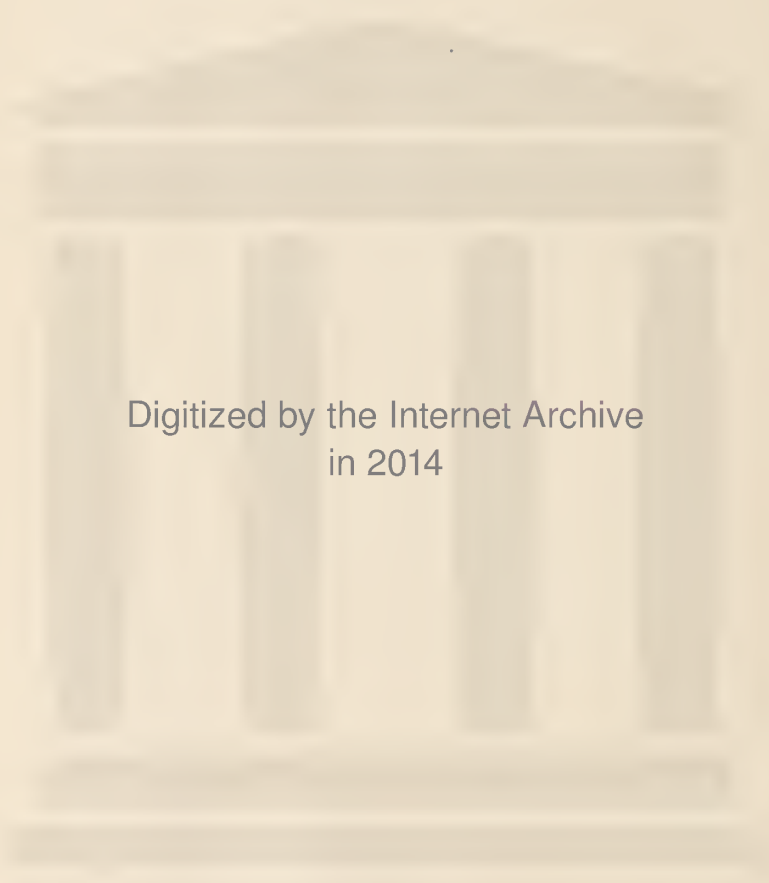
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Original Articles.

SYPHILIS AT THE BEGINNING OF THE TWENTIETH CENTURY.*

By James MacFarlane Winfield, M.D.,

of Brooklyn, N. Y.

IF the deductions of the medical historians are correct, syphilis is probably one of the oldest known diseases: but it was not until late in the fifteenth century, that any attempt was made to diagnose and treat the malady that had become an epidemic of serious import throughout the whole of Continental Europe.

At that time the unfortunate victims were not ostracized, nor was syphilis considered a disease of sin.

One can almost imagine that it might have been as freely discussed as is typhoid fever at the present day, for the very name syphilis was given to the disease in a satirical poem, which attained great popularity.

But as time went on, this disease, either through prejudice or ignorance, came to be looked upon as a disgrace, and brave indeed was the person who dared to speak openly of those disorders that were called venereal.

This extreme opinion prevailed well up until the beginning of the twentieth century; then those who appreciated the dangers of syphilis, realized that if anything was to be done to control the scourge, the public, especially the young, must be educated regarding its dangers.

Consequently a campaign of publicity was begun by physicians, clergymen, social workers, dramatists and the newspapers, and already there are evidences that ultimately the desired results will be attained, for the barriers of false modesty which prevent parents and physicians talking frankly to the young on tabooed subjects are being removed.

The agitation over the subject has attracted the attention of all of the civilized nations, and quiet, but effectual work is being done that looks toward state control of syphilis and allied diseases.

This twentieth century agitation and publicity is due in a great measure to the wonderful discoveries that have been made regarding syphilis during the last fifteen years.

Ever since it was proved that many diseases were of microbic origin, syphilographers have made many futile attempts to identify and cultivate the special germ that might be responsible for syphilis; success was finally attained by Schaudinn, who discovered

* Read at the annual meeting of the Suffolk County Medical Society, October 30, 1913.

the spirocheta pallida. Shortly after this epoch-making discovery, Metchnikoff and Roux succeeded in inoculating the disease in the lower animals.

The next notable advance was Wassermann's compliment fixation test, then came the crowning achievement of all, salvarsan.

While the excitement created by Prof. Ehrlich's discovery was still high, Noguchi, of the Rockefeller Institute, succeeded in artificially cultivating the spirocheta, and later demonstrated their presence in the brains of patients dead from paresis. Still later other investigators were able to discover the living organism in particles taken from the brains of patients suffering from paresis.

To Noguchi must also be accredited the preparation known as luetin. This is made from the artificially cultivated spirocheta and is of distinct value as a diagnostic test in doubtful cases.

These recent discoveries have aroused the greatest interest in syphilis, and clinicians are studying the disease from an altogether new view point. All careful observers of disease were suspicious that many unaccounted-for affections of various organs might be the end result of syphilis, but there was no way to verify these suspicions until it was made possible by the discoveries of Schaudinn, Wassermann and Noguchi.

Having thus briefly touched upon the important points regarding syphilis at the beginning of the twentieth century, permit me to elaborate, giving the results of personal observation.

The demonstration of the spirocheta pallida in the various lesions of syphilis, be they primary or tertiary, has had a marked effect upon the diagnosis and treatment of the disease; formerly, treatment was withheld until the secondary symptoms were manifest, now, when a patient has any ulceration, or other lesions that suggest syphilis, search is made for the organism, and if found, treatment is immediately instituted; it is not necessary to wait until the patient is thoroughly saturated with the poison, before beginning treatment, as it is much easier to eliminate the spirochetæ before they become localized, than it is after. The finding of the specific organism in the brain and spinal cord has cleared up the mooted question whether paresis and tabes were syphilitic or parasymphilitic affections.

The Wassermann Reaction.—It is frequently argued that the Wassermann reaction is of little value in the diagnosis of syphilis.

If any one has no other way of judging its value, except by the many, often contradictory, reports, this doubt would be justifiable, but when one actually sees the practical working of the test, all doubt is laid aside and although acknowledging that it is open to many errors, it, nevertheless, is one of the most valuable diagnostic aids that has ever been discovered.

It should be remembered that this test is not for the detection of the spirochetæ, but for certain substances, called antibodies, manufactured by the spirochetæ.

In primary and early secondary syphilis the reaction is generally negative, because the blood does not yet contain enough antibodies. That there may be exceptions to this rule, the following history will show: a Wassermann test was made from the blood of a patient with a five day old chancre; the reaction was four plus positive; this finding was verified at another laboratory from another sample of blood and at the same time spirochetæ were found in smears taken from the chancre.

The positive reaction is especially high in untreated secondary cases and in the florid hereditary type.

In cases that have undergone recent treatment, the reaction is apt to be negative or doubtful, if the specific treatment is discontinued, in from two to six months the positive reaction will generally return and the only way to insure a repeated negative reaction is to continue the treatment.

This persistent return of a positive reaction has led an eminent European syphilographer to remark that he doubted if syphilis was ever serologically cured. One of the first patients I gave salvarsan to has never had a negative Wassermann, although clinically he is entirely well.

In late syphilis the reaction is sometimes negative when the first test is made but becomes positive after the patient has a dose of salvarsan, or has been on a short course of mercury.

This peculiar behavior of the test has been noted several times in my service at the Kings County Hospital. In these cases, the primary negative reaction may be accounted for by the fact that most of the patients had been drinking heavily before their admission to the hospital. The ingestion of alcohol will inhibit the reaction for twenty-four to seventy-two hours after taking it.

Why the reaction should become positive after the patient has received specific treatment is difficult to determine. It may be that the mercury or salvarsan filling the juices of the body might drive the spirochetæ from the localized tertiary lodgments, and when they were freed they manufactured and threw out in the blood the necessary antibodies to produce a positive reaction.

In cardio-vascular syphilis the reaction is more frequently positive than in tertiary involvement of other organs or tissues. The reason perhaps is that the progressive disease of the channels through which the blood flows would be more loaded with the products of the parasite, and consequently the reaction would be more often positive than when the disease was localized in the cutaneous or nervous system.

It is a well known fact that syphilis does affect the heart much more frequently than is generally believed, and syphilographers advise that all patients with obscure ailments of the cardio-vascular system should be tested with the Wassermann test. If this test was made as a routine in many cases of heart and vascular diseases it is possible that there might be many surprises in store for the internist.

If the reaction is negative it is just as valuable as if it were positive, for in these cases it would be an additional guide to treatment.

The reaction may or may not be positive in paresis, if the test is made from the blood alone. To be certain a control test should also be made from the spinal fluid.

In tabes and other manifestations of nerve syphilis both the blood and spinal fluid should be examined.

Perhaps one of the most fruitful causes of doubt regarding the efficacy of the Wassermann test is what is called the short-cut method of making it. All laboratory workers are agreed that the original methods are the best, and when for any reason some of the modifications are used, the careful workers control their findings by doing the straight Wassermann.

Doubt can also be cast upon this test by having it done by incompetent men who have had little or no laboratory training. It is easy enough to say if a reaction is frankly positive or negative but it requires skill and experience to interpret the findings when the reaction is doubtful.

The revelations of the serological tests have caused many people to develop syphilophobia, and it often takes all of one's persuasive powers to convince patients that they are not going to become victims of all the dreadful complications of the disease.

Someone has estimated that seventy-five per cent. of the human race is syphilitic. This estimate was made before the days of serological tests. If the estimate was made now it undoubtedly would be considerably higher. It is interesting, and often alarming to receive a positive report when syphilis had not been suspected, and while these unsuspected positive reports emphasize the value of this diagnostic aid, it should also impress upon the minds of practitioners the danger of giving, in certain cases, too much prominence to this laboratory finding. There has always been, and there will always be, a certain number of syphilized people who will not show any tertiary evidences of the disease, and who will die from some ailment that is not syphilitic. We should not get hysterical and overestimate the fact that syphilis is often found where it was not suspected. These laboratory aids in diagnosis should be used as aids, but they should not be allowed to distort one's viewpoint.

The question is often asked, "What is the value of a negative reaction?" If the reaction is persistently negative in one who gives only an uncertain history of syphilis, or in one who has been thoroughly and scientifically treated, and if the test has been made by competent men, the negative report is valuable because it is a pretty positive indication that either the person never had the disease or that he is cured.

In view of the fact that the Wassermann blood test is open to many chances for error and accident, a case of syphilis should never be declared cured until the cerebro-spinal fluid is found to be normal. A syphilitic may show no clinical evidences of the disease, and the Wassermann blood test may be persistently negative, while the cerebro-spinal fluid will indicate that the disease is still present although inactive.

Salvarsan and Neosalvarsan.—Although a short time has elapsed since these drugs were introduced as a remedy for syphilis, enough evidence has accumulated to make some practical deductions possible. Unfortunately, except in rare cases, the dream of the discoverer that one dose would sterilize the patient of all of the luetic poison has not been realized. One dose does not cure the disease, although it usually removes all of the clinical evidences, and it often requires a number of doses to bring about a serological cure. Salvarsan, when properly administered, is the greatest remedy we have for syphilis, and if we except quinine, the greatest remedy that has ever been discovered for the specific cure of any disease.

In spite of the many favorable reports regarding the effect of this arsenical compound, there are many physicians who do not believe in the efficacy of salvarsan.

Some of these objectors speak against salvarsan through lack of experience with the drug, others through fear of it, because of

the accidents and deaths that have followed its use. It is unfortunate that it is not the rule to report all of the failures as well as the good results when a new remedy is being tried out, for then all could review the subject and form an unbiased opinion.

Untoward symptoms and deaths have occurred after the use of salvarsan: vomiting, diarrhoea, the Herxheimer reactions, were frequently seen when the drug was first introduced, but since the technic has been improved and freshly distilled water is used for making the solutions, these occurrences are much less frequent.

There are about three hundred authentic reports of death up to date. This is a very small number when we realize that these two arsenical compounds, salvarsan and neosalvarsan, have been administered over 4,000,000 times.

Some of the reported deaths seem to have been the direct outcome of the poisonous effects of the drug, while others, the greater number, could be attributed to other causes. During the past three and one-half years I have either given or superintended the giving of salvarsan or neosalvarsan in over two thousand cases of syphilis in its various stages. While some of the patients developed nausea, headache, etc., I have had no case of arsenical optic neuritis, no auditory disturbance, and only four deaths.

I have given the drug when the eyes were involved, and the effect upon the eye symptoms was just as satisfactory as it is upon other syphilitic symptoms or lesions. Only recently I gave a full dose of neosalvarsan to a patient suffering from beginning optic neuritis. Within a week the eye trouble was considerably lessened; two weeks later he received another dose, and the process in the optic nerve seems to be stayed, the sight has returned and it is confidently believed that it will be saved. This is a personal verification of what Ehrlich and others have insisted upon, viz., that syphilitic disease of the eyes, even though it involves the optic nerve, can be stayed and cured by salvarsan.

Regarding the four deaths, one patient died on the third day, one on the tenth, and two, one week after the drug was given.

They all developed symptoms suggestive of nephritis, which was verified, in two of the cases, by autopsy. Both of these patients had advanced kidney disease, and it is safe to assume that the remaining two were similarly affected, for their habits of life were such that eventually they would have developed pronounced symptoms of kidney disease. These casualties are mentioned in order to emphasize the necessity of carefully examining all candidates for salvarsan for any contraindications which are advanced nephritis, valvular disease of the heart, advanced pulmonary tuberculosis, chronic alcoholism, marked vascular changes and diabetes.

Traces of albumen in the urine or transient albuminuria, unaccompanied with microscopical evidences of kidney disease, need not deter one from giving salvarsan, for if the nephritic condition is not chronic, the salvarsan generally clears the urine of all evidences of kidney irritation.

Since the discovery of salvarsan, the treatment of syphilis has undergone a marked change, and the consensus of opinion is that the best results are obtained if the cases are managed somewhat according to the following plans:

If the patient is in the primary or early stages of the disease, a full dose of salvarsan should be given; in from two weeks to a

month a Wassermann should be made, and if it is positive, another full dose of the drug is given. If the reaction is negative the patient is watched for perhaps a month longer, then the blood is again tested, and although the reaction may still be negative, it is safer to put the patient upon a three months' course of mercury, given either by inunctions or intramuscular injections.

This plan of treatment has cured many cases. I have been able to watch a number for over two years and both serologically and clinically they are well. In this connection, the following history might be of interest: Mr. V. consulted me for an ulceration of the lower lip. The indurated and indolent ulcer had been present for three weeks. Previous to its advent he had suffered from an attack of herpes labialis, but, as he was subject to herpes, he paid no attention to the sore on the lip until the submaxillary and sublingual glands became swollen and painful; then the correct diagnosis was made, and he was given a full dose of salvarsan. The active symptoms of the disease soon subsided and both serologically and clinically he has been well for over two years.

At present there is a patient in the hospital in the primary and early secondary stages of the disease who had syphilis two years ago and received a single dose of salvarsan intramuscularly. There is no doubt about the attack two years ago having been syphilis, nor is there any doubt of the present illness being the same, for the spirochetæ were found in the chancre. This is undoubtedly an instance of cure by one dose of salvarsan and the present attack is a reinfection.

In order to get a continuous negative Wassermann in the late secondary stage the patient must be given from three to five doses of salvarsan, and after a short interval he should be put upon a three months' course of mercury. It is better to begin with a small dose of salvarsan, increasing with each successive one.

By this method it takes about a year to perfect the cure, or what we hope is a cure which is a decided improvement over the older methods in the matter of time saving.

Serologically speaking, salvarsan does not seem to be as potent in the tertiary stages of syphilis as in the others; the clinical evidences yield much more slowly, and the positive reaction returns much more rapidly.

Experience has taught that the best way to manage a case of tertiary syphilis, be it cutaneous or nerve, is as follows:

The patient is first put upon a vigorous course of mercury combined with large doses of the iodides.

In inherited syphilis where the only evidences of the disease are the stigmata and a positive Wassermann the old fashioned mixed treatment seems to do as well as salvarsan.

If salvarsan is given to pregnant syphilitic women it is better to administer it before the seventh month, for if given after that time there is danger of inducing premature labor.

Salvarsan can be given to infants with perfect safety providing, of course, the doses are small. A convenient way to give it in infants and small children is by the jugular vein. Here again the effect of the arsenical compound should be supplemented by mercury.

Before concluding, it might be instructive to discuss the comparative merits of the two preparations, salvarsan and neosalvarsan, and also the methods of administering the drug.

The older preparation, salvarsan, is the better one, because it is less toxic, the prepared solution is more stable, and as it is nearly twice as strong as the newer drug, it is more certain in its effect.

The advantages of neosalvarsan lie in the ease of making the solution. It being a neutral salt the solution does not have to be neutralized before giving, and the bulk of the fluid can be greatly lessened. It must be remembered that the solution of either of the drugs must be made with perfectly fresh, distilled, sterile water.

It has been proved that many of the unpleasant sequelæ that were formerly observed were often due to old or improperly distilled and sterile water.

It is not such a simple matter to give salvarsan, for we are dealing with a drug that is irritating to the tissues, and every precaution should be taken to render it as harmless as possible. The physician should assure himself that the patient is in a fit condition to receive the drug, the solution should be carefully prepared and the injection should be conducted under the strictest antiseptic precautions.

Regarding the method of giving the drug.—If it were not for the pain and the necessity for confinement in bed the intramuscular method would be the one of choice, especially when a sustained action is desired, but the pain and the danger of necrosis of the muscle and a consequent slough that takes a long time to heal are so great, that practically all have abandoned this for the intravenous method.

Attempts have been made to give it per rectum. The drug is prepared as for the other methods, except that the solution is diluted with normal salt solution. Those who have given salvarsan by the rectal route claim good results.

In conclusion, let us review the status of syphilis at the beginning of the twentieth century.

The brilliant galaxy of discoveries regarding this disease during the last twenty years has given a new impetus to the study of syphilis. This in turn has caused a desire to educate the public regarding its dangers, and this publicity will aid in evolving some sensible and humane method of controlling the disease.

The therapeutics of the disease have been so perfected that the contagious period is greatly lessened and the time of treatment materially curtailed.

Considering what has been achieved in such a short time, it is not beyond the most sanguine dreams of the greatest enthusiast to predict that at the dawn of the twenty-first century syphilis will be classed among the rare diseases.

X-RAY THERAPY.*

A Plea for Its More Extended Use in Gynecological Cases.

By Frederic J. Shoop, M.D.,

UNTIL recent years, X-ray therapy was confined almost entirely to the treatment of diseased tissues situated on the surface of the body, because, with the apparatus in use, any attempt to reach tissues situated deeper than two (2) centimeters

* Read before the Brooklyn Gynecological Society, November 7, 1913.

would result in destruction of the skin before more than an irritating or stimulating effect could be secured on the tissue to be reached. Many times, also, too weak a tube was used for surface work, or the stronger tube was used for too short a time, so that, instead of destruction of the pathologic growth, renewed activity occurred by reason of the stimulating effect of so inefficient a dosage.

So, deep work was declared impracticable, and it was not uncommon to hear the remark from men of apparently sound judgment—"The use of the X-ray in treatment of pathologic growths in these enlightened days is nothing short of criminal."

Within three or four years, manufacturers of apparatus, radiographers, and radiotherapists, both in Europe and on this side of the great pond, have been bending all their energies to solve the problems confronting them, and have so well succeeded in eliminating some of the difficulties that Roentgenologists are now prepared to offer a scientific, rational, and fairly precise method of treating certain diseased tissues lying in the depths as well as on the surface of the body by means of measured, massive doses of filtered rays used at proper intervals, in proper manner, and for a proper length of time. Much desired is yet to be accomplished along these lines; but what has already been done is well worthy of being brought before this Society for its consideration.

To name all who have had a hand in bringing the work up to its present improvement would be almost equal to compiling a professional international registry; and now, since the publication of the work of Gauss and Lembcke, entitled "*Roentgentiefetherapie*" (or Deep X-Ray Therapy), and the appearance in our own medical journals of the several more or less complete abstracts from it, including a very able one by Dr. R. L. Dickinson of our Society, quite a number of Roentgenologists have been putting those methods to test and reporting their varied successes. In the discussion of these reports there appears much favorable and not a little adverse criticism. The difference in the types of generating apparatus manufactured in Europe as compared with the more advanced types manufactured in our own country, the wide variation in the types manufactured here, as well as the difference in shapes, sizes, and hardness of tubes, together with a decided lack of a universal single standard for comparison or grading such apparatus, have all conspired to defeat anything like uniformity in the reports of the various workers with the ray and in the results obtained by them.

Therefore, it will not be out of place, before proceeding further, to briefly indicate what should constitute a necessary outfit with which to treat the cases under consideration by this paper. A few years ago, the static machine was pronounced to be the best excitant for the tube for therapeutic use, as with the doses then used the ray from such tubes proved less likely to cause burns, and the tube tended to harden and maintain a steadier height of vacuum. But the limit was apparently reached with what has been termed a medium hard tube. With the static, we get a good quantity of electricity with too low an amperage for deep penetration, and we cannot use the massive doses. The coil evidently gave the best current, though in the new interrupterless transformer an improvement has just been added which enables it to

be used with equal success in giving a ray which will easily penetrate to the desired depth and be halted in that depth by suitable screens.

It is not necessary in actual practice to be continually testing your tube while giving a single or subsequent treatment. Having once standardized your tube by testing it at the beginning of its glow and again after it has run for a few minutes, noting the variation, striking an average, and marking it for its average work, you can then use that tube according to its marked indication of time necessary to produce the effect you desire with a near certainty that you are getting your effect; remembering that all skins are not equally radio-sensitive, and that if you do overstep the bounds of an erythematous dose you must wait a couple of weeks or more before repeating your treatment.

If you want to be extremely exact, you can use a device of Gauss which holds a quantimeter strip, one half in the open and one half covered by a ten mm. thick aluminium block to place on skin under the filtered ray and noting the two colors—the one half uncovered showing surface erythema dose and the other half under the block showing the shade, or strength, of interior dose. Even then, variations in the freshness of the strips spoil your accuracy.

It is necessary to have a machine or coil that will glow a tube which will show eight or nine degrees of penetration by the Benoist scale, the tube having sufficient vacuum resistance to allow only one, or at most one and a half, ma. of current to flow through it (or, as the Germans measure it, a charge on the wire of 10 or 12 ma.). Each worker must standardize his own tube in this way every time he uses a new one, and then test his tube by placing a sensitive platinum barium cyanide strip under it at the distance equal to that he expects to use it from the skin of the patient and determine how long it requires the ray from that tube to produce a tint of the color on the Holzknecht or Kienboeck scale which indicates the erythematous dose, then mark his tube so that at a glance he will know how to use that particular tube.

There is no single standard of measurement which can be used alone to express the measure of his tube. It requires the foregoing manipulation.

In the publication of their work Gauss and Lembcke give in minute detail all the experiments they followed up of their own, as well as those of their colleagues in various parts of Europe, working out by mathematical exactness the penetration of the ray filtered and unfiltered and through filters of varied composition. They used in their experiments an aluminium phantom body composed of ten sheets of aluminium, each 1 mm. thick, placed 1 cm. apart, which fairly represent the same thickness of human tissues, it having been shown that an aluminium plate of 1 mm. thickness offered the same resistance and absorptive power as one cm. of average tissue of the human body.

They demonstrated these points:

1. The weak or secondary rays from a given tube are the rays which are absorbed principally in the first cm. of tissue, and have the destructive influence according to the amount absorbed and length of time of exposure.

2. It is the rays halted in the tissue and absorbed by it, and not the rays which pass through, which affect that tissue.

3. The hard rays which pass through may by suitable screens or filters be halted at certain depths as desired and converted into the absorbable rays for therapeutic work.

4. The higher the vacuum in the tube (or the harder the tube), the greater the amount of hard rays in proportion to the weak rays.

Thus a weak tube of 6 or 7 Wehnelt units (corresponding to about 4 or 5 on the penetrometer scale of Benoist) produces radiance full of weak rays, and if placed at a focal distance of 20 cm. from the skin with a test strip of Kienboeck's platinobarium cyanide paper lying on the skin, allowing the unfiltered ray to fall for 200 seconds, the strip will show the 10X shade according to the color scale representing the surface erythematous dose. Of this ray 8X or 80 per cent. is absorbed in the first cm. of depth, allowing only 2X of harder rays (20 per cent.) to pass through, and this small percentage was all absorbed before it could pass 5cm. depth, leaving no ray to reach the desirable depth of 8 or 10 cm.

By using a filter of aluminum plate 3 to 4 mm. thick and with 3 or 4 layers of satrap paper placed beneath it, they found that all of the weak rays were absorbed by the filter and now only 40 to 45 per cent. of the remaining hard rays were absorbed in the first cm. of the skin, and these hard rays passing through were, by giving time enough, enabled to reach the 8 cm. depth with 5/10 of 1X, a very small dose for work, but it required 2,190 seconds, or over 36 minutes, to do this. So the weak tube is ruled out for practical use in deep work.

A medium hard tube of $9\frac{1}{2}$ to 10 Wehnelt units, or 6 to 8 Benoist, with a wire current of 5 to 7 ma. and a vacuum allowing only 2 to 3 ma. to pass through the tube will at the same focal distance give without the filter a superficial 10X dose in 155 seconds, as compared with 200 with the weaker tube. Of this ray only 45 to 50 per cent., or 4 to 5X, were absorbed by the first cm. and 0.2X reached the eighth cm.

The dose-quotient of ray absorbed in the upper layers is determined by dividing the amount absorbed in the first layer by the amount available for use at the layer it is desired to reach, say the eighth cm. depth.

So, if 4.5X are absorbed in the first cm. and 0.2X in the eighth, then $\frac{4.5}{0.2} = 22.5$, or there is absorbed in the upper layers $22\frac{1}{2}$ times as much as in the eighth layer.

With the filters it required only 350 seconds, instead of 2,190 (when the weak tube was used) to produce the superficial 10X dose—and of this amount only 2 to $2\frac{1}{2}$ X were absorbed in the first cm., allowing a heavier amount to pass through for the deeper work—so that at 8 cm. the dose was 1.2X. This was the strength of tube which was used by Albers Schoenberg in his work in a large number of cases at 40 cm. focal distance from the skin, and by Gauss and Lembcke in their first series of cases at 20 cm.

With the filtered ray, 2.5X were absorbed in the first cm. and 1.2X available for use at the eighth cm., the dose-quotient is 2.1, that is $2\frac{1}{2}$ times as much absorbed in the first layer as in the eighth, as against 22.5 when the unfiltered ray was used. They also figured that by doubling the superficial dose to 20X, using the same medium hard tube running 700 seconds, a little less than 12 minutes, they were able to give with the filter 6 times as much of the deep-working ray as they could without the filter and not produce irritation of the skin or injury to the overlying tissues. After working with this strength of

tube in a large number of cases, Gauss found that it took too long a time to get all the effect he desired, so he used a still harder tube 10 to 12 Wehnelt units (or 8 to 9 Benoist), and 10 to 12 ma. current strength (or one allowing only 1, or at most $1\frac{1}{2}$, ma. to pass through the tube), placing the tube at the focal distance of 15 or 20 cm. from the skin.

He was now enabled to produce an erythematous or 10X superficial dose in 2 to 3 minutes, and then by raying in turn several different small areas of skin through apertures in a lead sheet placed over the part to be rayed, and changing the angle of the tube each time so the rays were all directed towards the center of the mass to be rayed in the deep tissues, he was enabled by this cross-fire to get at or near the erythematous dose in one sitting, at the point desired, without in the least damaging the overlying tissues and without consuming too great an amount of time. These same areas could be again subjected to the same dosage for 2 or 3 successive days; then after an interval of two weeks the series could be repeated, watching carefully for the least sign of the appearance of erythema on the skin. In this way he would ray as many as 10 or 15 fields at one sitting and in his last group of cases reported he gave in an average time of $1\frac{1}{2}$ months an average total dosage of 800X (superficial). He reached as high as 1,480X in the longest case over a period of $2\frac{1}{4}$ months. In the shortest case he used only 600X through a period of 1 month.

A nearer focal distance than 15 cm. will increase the danger of skin-burning all out of proportion to the time gained.

Regarding those cases to which the use of the deep ray is adapted there are three types of uteri which, on account of their tendency to deplete or exhaust the possessor by repeated hemorrhages, present more or less of a problem to the gynecologist as to what method of dealing with the particular case will give the best chance for a cure or relief, and in the long run of cases the greatest percentage of permanent cures—the fibromatous, the carcinomatous and the sclerotic. In Holy Writ we read: "And if thy hand offend thee, cut it off; it is better for thee to enter into life maimed than having two hands to go into hell." Many of our distinguished brethren of the gynecological profession and perhaps I with them, have seemingly paraphrased this into, "And if thy uterus offend thee, have it cut out immediately for it is better for thee to go through life without a womb than to run the risk of all the dreadful things that may happen to it if this be not done."

It is true that in certain selected cases of these troubles, the patient being willing and at or near the menopause, most or all of us will find that operation for removal does seemingly offer the neatest and quickest results, but many of these cases of hemorrhagic uteri are in younger women, anywhere from puberty to middle menstrual life and in some near its close, who are desirous of retaining this very important generative organ; many occur in working women who do not come under our observation until the fibroma is of considerable size—not until severe hemorrhage, pains in groin or in back, or headache or dizziness drives them to seek relief; and there are some others in whom carcinoma has already made such ravages that any operative procedure would be entirely out of the question. Again, the hemorrhage from the fibromatous uterus has so debilitated or so nearly exsanguinated the

woman that she is not in a condition to stand the added shock of a hysterectomy (we have seen such cases die within twenty-four hours, if not on the table). And there are a few who might easily and safely pass the ordeal of an operation, but who flatly refuse to consider such a step, declaring they prefer to die rather than be operated on, and upon whom no amount of persuasion will cause them to alter their decision. What shall we say to these? Shall we offer them nothing but operation and calmly sit back and tell them to take it or leave it as they choose? Or shall we offer them the benefit of the ray treatment?

Then again if, as it has been proven, it does cure these few cases, why should we not be willing to offer every like case the benefit of the same treatment before resorting to operative work, or in addition to operation, if both seem indicated?

Of course there are some varieties of fibroma which, according to the experience of some workers, are not suitable cases for the ray; such are those with small pedicles, whether subserous or submucous, gangrenous fibromata, fibroma situated at the neck of the uterus and enlarged sufficiently to become impacted in the pelvis. But the ray is of special use in the interstitial variety whether single or multiple and whether partly submucous or partly subserous, if there is a broad base of attachment. These are easily cured with the ray, whether a medium hard or very hard tube is used. The medium hard tube takes longer to accomplish the result. In the hemorrhagic type known as the sclerotic uterus, or in Germany as "*metropathie hemorrhagica*," the hard tube must be used with massive doses if amenorrhœa is to be produced, as the medium hard tube will scarcely do more than reduce the flow to normal menstruation and may fail even in doing that in some cases.

Before the very hard tubes were in use, all workers condemned the ray in carcinoma uteri, and many still do not advise it; but in view of the excellent work in skin cancer and in cancer situated near the surface of the body, theoretically there is no valid reason why these massive doses properly filtered and with the cross-fire application, should not equally well attack the same disease in the deeper structures, especially if we use it in alternation or in conjunction with radium applied to the interior of the vagina or the uterus, because the cancer cells are destroyed before the rays injure the normal cells of tissue in which they lie.

It is probable that workers who are using the massive doses for other deep work have been deterred from trying it for cancer because of the unfavorable results reported by those who were content to use the medium doses, the objection being that the ray was too weak at that depth and stimulated the disease to more rapid growth. Another type of uterus that may be included in this group of cases amenable to ray is the chronic subinvolved uterus with leucorrhœa; many of these are certainly benefited thereby, one of the first effects being an increase of the discharge, then complete cessation with appreciable shrinking of the size of the uterus.

The proper apparatus for generating the ray, the right degree of hardness of tube for producing the penetrative rays, and the kind of screens have already been mentioned, but the method of application, the length of time of exposure, the frequency of application, the number of applications, are all of equal impor-

tance if success is to be obtained, as well also the protection of the operator from the irritating effects of the ray upon himself.

Now let us consider how the ray acts on the cells of various structures. I have already intimated that cancer cells have a selective reception for the ray, and here is what one worker, Dr. Sidney Lange of Cincinnati, says in a paper read at the meeting of the A. M. A. in June, referring to the cancer cells: "They are more susceptible to the X-ray either because they have a higher coefficient absorption for the Roentgen ray than the normal cells or because owing to their subatomic make-up or abnormal metabolic activity they are less resistant to the influence of the Roentgen ray." He then quotes the following from Guido Holzknecht: "Every living cell which has absorbed Roentgen rays will suffer a chemical change which may produce no appreciable effect or may result in stimulation, irritation, or degeneration—the effect depending on two factors: (1) the amount of rays absorbed by the cell as determined by certain conditions which are imperfectly understood, chief of which is perhaps the ultra-chemical structure, and (2) the susceptibility of the cell to the Roentgen ray, the so-called radio-sensitiveness of the cell. Among factors determining the sensitiveness of the cell are the function of the cell, the physiological relation of the cell to the rest of the organism and its metabolic activity."

In raying the uterus for fibroma the ray acts partly on the cells of the ovary and partly on the fibroid tissue itself; and in the sclerotic uterus it acts partly on the ovary and partly on the blood vessels of the uterus. Therefore, it is the object of the Roentgenologist to direct his rays so that they will reach the ovaries with a sufficient dose to cause temporary, if not permanent, cessation of their functional activity, as well as to reach the cell structures of the neoplasm or hypertrophied uterine tissues, remembering that the destructive effect on the neoplasm precedes the functional arrest in the ovary.

Because of this effect on the ovary a number of men have been loudly outspoken against using the ray in the early years of menstrual life, on the ground that irreparable injury might occur in that organ.

Dr. Deaver in a paper read in the Section of Obstetrics and Gynecology of the A. M. A. at Minneapolis last June, speaking of the action of X-rays on the generative organs, says: "They act by causing atrophy of the ovaries and of the whole genital tract, including the uterus. On account of this effect on the ovaries the X-rays cannot be used on young women." Then later on in describing his idea of the proper method of treating uterine hemorrhage in sclerotic cases says: "I believe that in well-marked cases of uterine hemorrhage, due to sclerosis of the vessels, complete removal of the uterus is the only sane treatment."

Now it is my contention that a certain amount of atrophy is what is desired in these cases of sclerosis as the activity of the ovary is abnormal and that degrees of effect may be produced on that activity from lessening of flow to complete cessation or to complete atrophy as desired, and if perchance in bringing about a cure by the X-rays in a young woman complete atrophy does result, would she be any worse off than Dr. Deaver's case treated by hysterectomy?

And if only temporary atrophic changes are produced and functional activity be restored later, she has the chance of maternity still before her, which would have been denied her under hysterectomy.

Others have thought that even if activity should begin after

temporary cessation, the ova might be altered or deformed in such a manner that should pregnancy ensue there might be increased danger of the production of monstrosities. Such a bugaboo reminds me of the objections raised in the House of Lords in England when the introduction of steam railroads was broached by the promoter. You remember that they argued that the gas and smoke of the monster engines would destroy all the birds in the air and all vegetation in the tracts of country through which the roads might pass, to say nothing of the disastrous effects on the health of the people who might be induced to ride at such an unheard-of rate as 25 to 30 miles an hour!

Now when you can show a number of teratoma resulting in pregnancies in women who have had the ray used, greater proportionately than those occurring in unrayed women, then, and not till then, will I deny unmarried or younger women the benefits of this treatment.

In fact, one case has already been reported where the ray was used to temporarily sterilize a woman who was infected with syphilis by her husband. The man was also subjected to the sterilizing ray as they wished to make sure that no progeny would result from intercourse while they were under treatment for the syphilis. Three years afterward they were pronounced free from the *spirochetta pallidum* and later, functional activity of their generative organs having been restored by lapse of the effect of the ray—the woman became pregnant and bore apparently healthy children.

As for the ray producing cancer in the uterus, as it has been known by its irritating rays to do on the skin, please remember that the latter is caused by the oft-repeated weak ray activity on the skin over a long period of time, a year or more, not by a few destructive massive doses which cause death of the tissue treated, which latter effect on cancer is the one desired. In several years of treating fibromata by the massive deep ray abroad, no case has been cited thus far of cancer occurring as a result of such massive raying. The real danger in using the ray is in not heeding the warning of an erythematous redness of the skin over the rayed portions, showing when the patient presents for the next treatment—if unheeded, and the ray is applied again at this time, the erythema may become a burn and the burn a slough—but by waiting a couple of weeks and then raying with a slightly lessened dose at each spot the skin will acquire the desired tanning instead of the burn. The operator should, of course, protect himself by a lead screen during the action of the ray, or wear an apron which is ray-proof covering the whole body. If he is to use a fluoroscope in watching the activity of the tube or for other purposes, he should, in addition, wear lead glass spectacles, or have a mirror reflection of the fluorescent screen to look at from his place of protection behind the lead screen. In manipulating the glowing tube, ray-proof gloves are desirable.

In a woman of average build, the ovaries lie normally at anywhere from 6 to 10 cm. from the surface of the abdomen, a little below the level of the symphysis pubis, when the uterus is in the pelvis, averaging 8 cm.; so that is the depth of the layer of tissues we have to consider in gauging the deep dose.

Of course, if the tumor mass has enlarged itself so as to reach up between the symphysis and the navel or even beyond the navel, the exact location of the ovaries is a matter of speculation and our energies are spent in directing the ray into the mass itself on all sides so as to effect its rapid shrinking and resolution. To do this it is necessary as I have stated to use a suitable filter. For ordinary use a sheet of

aluminium 3 mm. thick, either alone or combined with another filter of 3 or 4 layers of wash-leather or satrap-paper, is the most serviceable. The reason for using the additional help is that aluminium itself gives off during the action of the ray a secondary set of rays which slightly increase the irritating effect on the skin, and the leather or paper re-absorbs those secondary rays. For tissues less than 8 cm. in depth, a thinner aluminium sheet may be used—1 to 2 mm.—or for a greater depth of 10 to 14 cm. a thickness of 4 or 5 mm. is necessary. If we are going to ray a sclerotic uterus, our field of available abdominal skin surface is small, since we wish to apply the ray over that surface which is nearest to the uterine or ovarian structures; therefore, we will have to use, in addition, the skin area over the sacral, the ischiatic, pubic and pudendal regions and possibly intravaginal. Now if we use a sheet of lead for a screen to protect the rest of the abdomen, with an opening in it say of 1 to 1½ inches in diameter, marking the circle on the skin for future reference so we may avoid the same spots at the next raying, and ray through this limited area and successively through each area mapped out, with just double the superficial erythema dose (20X), we can by using 10 or 12 areas at one sitting safely produce about a 14 to 18X dose at the 8 cm. depth in a total time of exposure of about 25 or 30 minutes.

The next day proceed the same way, then wait 10 to 14 days and repeat the series, possibly giving it on 3 successive days, always watching for the least sign of skin-irritation, giving in this way repeated destructive doses to the pathological conditions just short of injury to the healthy tissues until menstruation ceases to appear. According to Gauss this may occur on an average of 1½ months or may take 3 months. If it is desired that complete amenorrhœa be induced it is advisable to give one or two rayings after cessation occurs. In this way 800X to 1,480X superficial dose has been used by Gauss.

In case of fibroma we have a large tumor and consequently a greater area of skin to make use of abdominally, and frequently a relaxed or flabby wall, which, being drawn down sharply towards the pubes for one raying and the next time pulling it well up, yields a larger number of fields for raying.

If we are to treat a case of carcinoma of the uterus, I would suggest using the ray for 2 or 3 succeeding days, omit for two weeks during which time radium should be used every alternate day, applied directly to the cervix, or, if possible, within the uterine cavity, repeating the series until the desired effect is obtained. If there is a considerable mass of the cancer protruding into the vagina, it is advisable first to thoroughly go over it with a Paquelin cautery, using no cutting instrument nor curet, merely wiping away the debris with a gauze sponge, using enough heat to penetrate through to the rectum, so as to just begin to be uncomfortable to the gloved finger inserted within the rectum pressing towards the tumor mass, as suggested by Dr. Percy of Illinois; and if the cervix is sufficiently open, inserting the cautery well up to the fundus and thoroughly roasting the interior—again using no curet. Then, after sufficient recovery, proceed with the raying as above stated. If the patient refuses the cautery treatment, proceed with the ray treatment, which ought, theoretically, to be sufficient without the harsher methods.

I hope later to collect the data from the cases I have already treated, and from such cases that come to me, so that when sufficient time has elapsed to show how permanent the effect of the

ray I may be enabled to report more in detail, giving cures, relief, prolonging of life, and failures, with their respective percentages, in the meantime urging the adoption of this line of work in hitherto abandoned or problematical cases.

After writing the above with reference to cancer I found this clipping from the *Monatsschrift für Geburtshilfe und Gynæcologie*, Berlin, on the efficacy of radiotherapy in gynecology, especially for carcinoma of the uterus.

"Döderlein uses the technic advocated by Krönig, Gauss, and Lembcke and to it attributes a great measure of his success. He reports thirty-two cases of myoma and hemorrhage with prompt and permanent benefit under radiotherapy and without any bad effects. The tumors entirely disappeared in many cases. More surprising still, he found a combination of Roentgen ray and mesothorium treatment effective in many cases of uterine cancer. Six cases are described and reproductions given of the microscopic picture before and after treatment. He thinks the rays had a direct effect on the carcinoma cells and not, as has been previously held, that the cancer cells were affected secondarily by contraction of the surrounding connective tissue. He also reports eight cases of unsuccessful treatment in cancers which had returned after operation."

SOME MODERN HIGH FREQUENCY APPARATUS.

By A. K. Sloan,

of Brooklyn, N. Y.

WHEN the Tesla Coil first came into general use it was regarded by physicians as a most dangerous and deadly apparatus. This fear was probably aggravated by the operations of certain fakirs who, posing as "Electrical Wizards" used the high frequency currents for stage exhibitions and who, for golden gain, grossly exaggerated the dangers attendant upon their use. This dread was further enhanced by reports of the terrific voltages and spark lengths obtained by the use of the Tesla Coil, but the main reason was that the medical profession did not know the difference between high and low frequency and the real reason for the absence of danger from the use of the former. The ignorance of the electrician is not referred to herein.

Of late physicians have become more educated to its use and the difficulty experienced is reduced to reassuring the patient. For the benefit of the latter, an attempt to explain the difference between high and low frequency, as applied medicinally, follows:

The current generated in a common battery is "direct"—that is it flows in one direction only, but the current from the secondary coils of an induction coil or transformer is "alternating"; it surges first in one direction and then in the opposite, reversing many times a second. The ordinary electric light circuits may be either direct or alternating. In the latter case the current generally surges back and forth at the rate of 120 times a second. This is called 60 cycle current, as two complete alternations make one complete cycle. "Frequency" is the number of cycles per second of such current and when we speak of a current having a frequency of 60 cycles we mean, as explained, a current of 120 alternations per second.

This may seem extremely rapid, but as a matter of fact it is

quite the opposite and, if the voltage is high enough, may be dangerous. However, as the rate of alternation increases the current tends to travel more and more upon the surface of the conductor, be it a wire, a pipe or a human being. This effect increases with the increase in frequency and when 250,000 cycles is reached, the current is quite harmless, if properly used, no matter what voltage is obtained.

The currents used in medicine and surgery generally combine a very high frequency and high voltage; sometimes as high as 800,000 volts and the same number of cycles per second. As it has been found impracticable to build a dynamo giving that voltage and frequency various apparatus and devices are used to produce this form of energy. The Tesla Coil or Resonator, as it is called, is the most important of these and comprises a transformer of unique design. There is no iron core. A coil of heavy wire, perhaps No. 4 to No. 12 B. & S. guage of a few turns inside of which is another coil of lighter wire, No. 18 to No. 24, of a great number of convolutions. This device generally assumes the form of a flat spiral. On a "spider" of light fiber or wood is wound about 40 turns of No. 18 bare copper wire, spaced about $\frac{1}{4}$ inch apart. At the end of the fortieth turn a piece of No. 12 copper wire is soldered to the end of the finer wire, given three complete turns and the end brought out for connection. Directly opposite this, a conductor is soldered to the inside wire of the heavy spiral and brought out. The light wire in the center is bent up and the ensemble, with the exception of the three leads, is then encased, filled with insulating wax and finished. To the center wire a large brass ball is fastened and to the outside wires are fastened connectors. This is a finished "Resonator."

The Tesla Coil, itself, is used in connection with an ordinary high tension transformer or induction coil giving 25,000 to 75,000 volts on the secondary. This is connected with the resonator, the spark-discharge gap and condensers to form an "oscillatory circuit." The condensers and spark gap raise the frequency tremendously. As is well known, the discharge from the condenser is oscillatory; or in a sense, alternating and of very high frequency. When this current is passed through the primary of a Tesla Coil; or what amounts to the same thing, this discharge passed through a resonator, the current taken off its secondary windings is of a tremendously high potential and frequency. Thus the voltage is "stepped up" twice. It may start at 110 volts, 60 cycle in the primary of the transformer and is taken off the secondary at about 75,000. It is then used to charge the condenser and discharged through the primary of the resonator and is there stepped up to 500,000 to 800,000 and a frequency of perhaps 500,000 cycles. This frequency is quite inconceivable, meaning as it does, 10,000,000 reversals per second, but it is easily produced and frequencies double this have been produced for experiment.

This is the current which is used and with it many startling results may be obtained. The sparks vary with the transformer used but would measure 20 to 25 inches in length in dry air between points when a $1\frac{1}{2}$ kilowatt power is employed. Such sparks are deep violet in color and produce loud snapping and cracking.

One peculiar manifestation, illustrating the difference between

high and low frequency, is called the phenomena of impedance. This is simply and clearly illustrated by bending a large piece of heavy copper in U shape and soldering the base of 100 watt common incandescent lamp to the two ends. Now, if the supply current to this lamp were a common direct or alternating current, the lamp would not light, of course. But, when the secondary current from a resonator is passed through the rod of copper, the lamp will light up notwithstanding the apparently easy path for the current through the copper U.

The medical usages for these currents are many and varied and a few will be mentioned herein. There are two kinds of current obtainable from the resonator described and they are of different use. First, we may consider the d'Arsonval current, named after its discoverer, Prof. d'Arsonval.

This is used in building up and invigorating diseased tissues and is soothing and sleep producing in its effects. The most common method of applying this current is called "Auto-Condensation." By this method the patient is made to become one of the electrodes of the condenser and is charged with the current directly. He is placed in a chair or on a couch which is covered with insulating material as silk, rubberized cloth or "Empire Cloth." On the under side of the covering, heavy tin, copper or lead foil is adhered. This foil is connected with one of the connectors of the resonator and to the other is connected a large handle which the patient holds. A milli-ampere meter is connected in series to indicate the amount of current passing through the patient. The amperage used varies but is generally confined between 750 and 1,500 milli-amperes, viz, 0.75 to 1.5 amperes. When the voltage is considered, this is a tremendous amount of power and would produce instant death at a low frequency, or if "direct current." But because of its high rate of alternation, nothing is felt except a slight warmth and tingling of the wrists as the current enters the body. This current is not a true Tesla Coil effect as the secondary of the coil is in no way used. The primary alone is used and forms what is called a d'Arsonval Helix. The two side connectors of the resonator are utilized.

Second, we may consider the "Oudin" phenomena which comprises current of a destructive nature. These are obtained from the secondary of the resonator and are true Tesla currents. They are generally applied in one of two ways, viz, "Fulguration" or "Effluve." The former is used for intense local application purposed to kill growths, such as warts, moles, small cancers, et cetera. Its action is to kill the root-cells of the growth and thus shut off its nourishment. The apparatus for "Fulguration" consists of a short aluminum rod, perhaps No. 14 B. & S. guage 6 inches long and pointed at one end. Over it is placed rubber tube insulation and the aluminum is connected with the ball at the center of the resonator. The current is switched on with the transformer spark-gap closed. This gap is opened a little to permit a small current to pass through the resonator primary. Then if the finger is touched to the end of the pointed aluminum electrode, a slight burning sensation is felt. This burning effect is used to kill the cells of the growth. The chemical action of the current on the air also produces or generates ozone and nitrous oxide which kills bacteria present, making the operation perfectly antiseptic.

The "Effluve" electrode consists essentially of a brass point mounted on a cylindrical fiber core perhaps 8 inches long and $1\frac{1}{2}$ inches in diameter. This is mounted on a 12-inch hard rubber handle. The fiber core is wound with one layer of No. 28 double silk covered wire. One end of this wire is connected to the brass point and the other is brought through the handle to a connector on the end. Such a coil appears to have an intensifying effect upon the current. It is connected to the apparatus in the same way as the "Fulguration" electrode but the spark gap is opened wide and as heavy a discharge obtained as possible. When the current is switched on a heavy "Effluve" or "Brush Discharge" is seen to emanate from the brass point accompanied by a loud hissing and crackling. In some cases the discharge is 10 to 20 inches long, and in a darkened room appears a mass of bluish fire with long streamers spreading out in all directions. Even the turns of wire give off a bluish haze and the characteristic odor of ozone and nitrous oxide is noticed.

The application of this treatment necessitates a table having a good ground connection. The patient is placed upon this table under the influence of an anæsthetic, for the pain caused would be excruciating. The electrode is brought within such a distance of the body as will permit the "Effluve" to reach the skin, but not close enough to permit the passage of a spark. The skin grows red and remains extremely sore for many days. Thus the growth is checked and some of the cells killed and repeated applications are reported to kill the growth entirely with a few exceptions.

There are several other pieces of apparatus called, "Vacuum Electrodes," which are used with "Oudin" currents. These are familiar to most of us and comprise glass tubes blown to a bulb at one end with a short piece of platinum wire sealed in the other end. They are pumped to a fairly high partial vacuum, and are used as a counter-irritant in some cases of wounds, bruises, burns, et cetera, and serve of course, to stimulate the action of the blood in the affected area. They are connected to the brass ball in the same manner as the other electrodes. The spark gap is opened until the bulb is filled with a greenish haze. Now, if the hand be brought near, sparks will jump between it and the glass. This is due to the fact that electricity is induced on the outer surface of the glass bulb and seeks to escape to the ground. But if the electrode is brought into direct contact with the skin, the sparks cease to jump and the sensation is only one of pleasant warmth. The inflammation subsides and if the treatment is continued at intervals, the wound heals very rapidly and with forced treatment, a deep wound heals at the surface first. In all treatments with the "Oudin" currents the patient must be "grounded" or connected to the ground in some manner. In most cases this can be accomplished by simply standing on the floor, but sometimes a special connection is used.

This brief article indicates the infancy, the opportunities and the scope of this incomplete science and the writer has drawn largely from Mr. E. M. Roeder, Nikola Tesla, Professors d'Arsonval and Oudin, who have put much of their life into the study and development of the subject, and who will be more fully appreciated when the benefits of their researches are more commonly enjoyed.

Of recent years, an immense amount of interest has reverted

to a further application of this High Frequency. In a word, all radio stations or so called "Wireless" equipments, depend for their usefulness upon their ability to issue or propagate electrical energy and this energy is "radiated" into space from conductors, or high wires called the antenna. Now, to affect radiation, it is necessary to use a high frequency current and to obtain this current much elaborate and expensive apparatus is used. Unlike the use of high frequency in medicine, this use requires a larger amount of energy, often exceeding ten amperes instead of one as mentioned above. Furthermore, this current must be controllable and finely divided into periods of various duration to form the characters of the telegraph code.

Thus, a simplified system of generation was sought and the resultant generator, called a high frequency generator, was a machine which developed the desired current when rotated. Now, the speed of rotation was necessarily rapid, for it would produce a current of a frequency exactly equal to the number of armature divisions times the number of revolutions per minute. Making the speed of revolution as high as possible, the desired frequency was not obtained and increasing the number of armature divisions did much to raise the frequency, but the machine as a whole was not useful until the field was revolved at high speed in the opposite direction. This high frequency generator did not become practicable owing to the mechanical difficulties involved in the necessary speed of rotation which was as great as fifteen thousand revolutions per minute in a well-known German type.

The centrifugal force realized in such a machine caused much havoc amongst the early experimentors and no commercially successful type of high frequency generator is known as yet.

BACTERIOLOGICAL DIAGNOSIS.

By Horace Greeley, M.D.,

of Brooklyn, N. Y.

IN diagnosis, when after a general survey, one jumps at conclusions and makes a guess, he is very apt to declare that conditions exist which are visible only in the arrangement resulting from the last shake that his brain cells, like pieces of colored glass in a kaleidoscope, have had.

Accurate determination of a disease is usually so difficult, even in what are sometimes supposed to be the simplest conditions, that the best and only safe rule is to always use all available methods of reaching the truth.

You all have no doubt read in recent medical literature how fully 33 per cent. of the operations of the best surgeons for appendicitis, a condition usually thought to be distinct, have disclosed a normal organ. Richard C. Cabot contributed a memorable article last year to the *Journal of the American Medical Association* comparing the diagnoses with the autopsy findings in some 3,000 cases where every modern aid to accurate investigation had been used, with a result that should be cautionary to the thoughtful. Some may think that no matter what evidence is gathered all depends upon the interpreter. Perhaps so in many cases, but then, as all normal brains have a common working basis, the result is controlled by the number and strength of the facts presented, and you

know that with bullets, that with a steel jacket, is least distorted by passing through ones head, even though that be not of wood.

As it is evident that most of our bodily ills are dependent, directly or indirectly, upon parasitic activity, the importance of our steadily increasing knowledge of the offending micro-organisms is apparent to all. Before I studied medicine I used to think, why is it that every one does not wish to learn everything possible about a subject, which, as it has always been said that a man will "give all that he hath for his life," is of such vital importance to all. I have since learned that human nature would rather guess than study, and that all of us might welcome the day when we could turn over, like Solomon in his harem, and exclaim, "Much study is a weariness of the flesh!"

A young woman patient told me the other day that she could conceive of no greater pleasure than to behold a constant stream of moving-picture film displays, and when I was tempted to think what a trivial brain she must have, I thought of my own pleasure in wasting sleep-time over a microscope and the extreme probability that while she might change to new pleasures I would become more and more absorbed in mine. But this is not to the point, which is to indicate how vital to the treatment of disease bacteriological knowledge is. Just think of the volumes on skin diseases in our libraries, and even if one is disposed to be satisfied with one or many of the treatments recommended, what can he say of the etiology? But the last few years, and the present and the immediate future will change all this; moulds, yeasts, bacteria, protozoons, are rapidly being identified with different lesions, and so soon as a definite cause is known specific treatment is usually at hand. Although probably many skin lesions are caused by the local action of protein decomposition products (or toxins, as they are commonly called) arising from organisms in other parts of the body, why should not a scraping and a culture from every such lesion be examined? Known possibilities would be excluded, perhaps new parasites discovered, and in many a case real diagnosis made, and, owing to the physician's efforts, and not in spite of them, recovery effected.

The skin specialist, I presume, does all this and more, but the great majority of cases do not reach him; such as do not should at least pass under the microscope, without which so much is guess work. Neglecting this precaution one is apt to fall into error, even as egregious as that of a practitioner, who, however, does not live in Brooklyn, who sent a patient to me the other day for an urinary examination—uric acid to be determined, as it was thought responsible for a troublesome pruritis. She was a talkative woman and, while I was giving instructions in regard to the specimen of urine desired, told me that her husband had the same condition, and that she had cured herself once, two years past, with sulphur ointment. One glance at her finger-angles was enough to tempt the production of a lense, which brought the expected burrows into view. Of course I said nothing, but sent the desired urinary report without comment.

It is positively dangerous to treat a case of eye inflammation without bacteriological examination. I recall one of the first cases I ever had in practice, a boy of 12 or 14 who had been employed on a ship sailing to the Isthmus. I had been treating his

grandmother and my attention was called to his eyes which were reddened as with an ordinary catarrh. I prescribed that subterfuge, boric acid wash, and left. The next week he was brought to my office, with a profuse discharge from the left eye and the statement that his sister had discovered that he had a urethral discharge. A slide was prepared and the anticipated discovered, but too late to escape severe damage to vision. I felt so chagrined about the matter that I was really relieved when I heard that the boy had died from typhoid a year later. Is there any merit in disliking to have our bad work around? There are a dozen varieties of bacteria known to produce conjunctival inflammation of which at least one is associated with eye contagion in particular, the Koch-Weeks' bacillus, but we could never have seen it, in even our minds-eye, without the microscope. If you find it use a vaccine if you expect to rid the patient permanently of the infection. It may be true that in many instances treatment is the same and independent of the bacteriology but this could not be said of cases associated with the presence of the diphtheria bacillus. Just think of the ups and downs of so called trachoma, a condition that can never be an entity so long as a specific cause is unknown.

Everyone naturally tries to work with the tools that he has, so there seems to be a preference among ear-men to operate for a chronic otorrhea, disregarding its bacteriology, frequently on the plea that with bone involvement vaccines are useless and forgetting that with good reaction dead bone is quickly cast off. While I was a medical student I saw a girl whose entire scalp had been torn off by factory machinery and from whose head, a few weeks after the accident, large shell-like sequestra of bone, 2 to 4 inches in width, from the outer table of the skull were discharged, evidently indicating that bone came under the same biological laws as other connective tissues.

On the basis of vaccine treatment alone, bacteriological diagnosis is very valuable in ear cases. I well recollect having as a patient a little boy of 7 who, since an attack of scarletina at the age of two, had had a profuse ear discharge, and who was practically deaf-and-dumb. The discharge was almost a pure culture of an organism so like the diphtheria bacillus that at first I feared to use a vaccine from it and chose a contaminating diplococcus. However, when this had no effect, I grew bolder, changed to the diphtheroid, and in six months entirely arrested the discharge and effected considerable improvement in hearing. As a contrast to this case, in which the organism predominating in the discharge proved to be the one against which the patient's resistance required raising, I will mention a condition in which the contrary was true. It was one of acne in which, following the guidance of Sabouraud, the discoverer of the bacillus so named, I went to great trouble, made a special oleic-acid culture medium, grew the anærobic bacillus, and for two months used it, but in vain, on my patient. Then, noticing an article by Chipman, in the *Journal of the American Medical Association* of February last, from which I deduced that the acne bacillus might be but a saprophyte on sebaceous secretions, and that all inflammation might result from a vanguard of cocci, I changed my medicine and cleared his complexion. It seems probable from the literature that the acne bacillus causes seborrhea, but that the aid of the cocci is required to produce the inflamma-

tion of a well developed acne. These cases show the possibility of blaming the wrong organism, even after microscopic examination, and how one might fail to appreciate the value of bacterial vaccines.

My door bell was rung the other morning by two women who asked for an ear specialist; they were directed down the street to the nearest, but soon returned, saying that he was out of town, and begged me to do something for one of them who complained of such severe vertigo and nausea that she had to be led. Her sister said that she had had purulent discharge from both ears for years, and that she had suffered from repeated attacks of dizziness. I made a smear and took a culture from the discharge, prescribed temporary relief, and told her to return at the end of a week. She never did, but I found in the smear masses of diphtheroid organisms with here and there a spirocheta—evidently the pallida. A diphtheroid vaccine might have done her good, hardly an ear operation; but what might have been accomplished with salvarsan and mercury, possibly plus the vaccine!

Some pride themselves on ability to make clinical diagnosis of diphtheria and scorn to take a culture, yet, as approximately one third of all cultures taken fail to disclose the specific bacillus, the uncertainty of clinical findings alone is apparent.

There are a great many microbial causes of tonsillar inflammation, and it would seem that one called to treat such would be interested beyond merely excluding the commonest cause of serious disease; for, unless the specific offender be discovered, the patient has reason for the practice so common nowadays of spending her dollars in the department store and her pennies for a dose of salts. There are no end of organisms on record as having caused serious naso-pharyngeal disease, the pneumococcus, the meningococcus, various spirochitas, the influenza bacillus, the glanders bacillus, down to that ordinary saphrophyte of the potato, the bacillus prodigiosus. Even yeasts and moulds have frequently been found; I noticed the other day the report of a case of a young man, who had worked at chicken raising, who presented, entirely covering his buccal and nasal pharynx, a black membrane formed by an aspergillus, a fungus which frequently causes disease in these fowls. Perhaps Flexner may soon present us a means of recognizing the presence of the poliomyelitis parasite in the nasal mucosa, when we might anticipate the disease or at least detect carriers. At present we only discover the enemy when he has done his worst.

If we judge by the diagnoses we hear so frequently, influenza would be a very common malady, and yet bacteriologically the organism is difficult to find hereabouts, the streptococcus in 99 per cent. of the cases that I have examined being the offending parasite. This last commonly produces a sub-acute condition which, from a therapeutical standpoint, would well repay accurate diagnosis as cases of this form of rhinitis and bronchitis are quite amenable to autogenous vaccines which save prolonged convalescence.

How can one rest content with a report giving a negative sputum finding in a case of suspected tuberculosis, when the literature contains numerous cases of even fatal lung disease clinically simulating this malady, cases proven to have been caused by fungi,

such as sporothrices, yeasts, diphtheroids, and so forth? There was a report in the *Lancet* last February of a case in which mucous discharge colored red by the biological activity of the prodigious bacillus (later proven to be the infecting agent) had been mistaken for pulmonary hæmorrhage. How much better it would be if a sputum analysis gave the entire findings, even if full identification of all organisms seen could not be undertaken? Even in cases with the presence of the tubercle bacillus there are always co-operating organisms that help it along, or hyena like, feast on its leavings and give rise to serious auxilliary toxins. I have frequently found that before beginning a course of tuberculin a preliminary immunization of the patient against bacteria of the secondary infection is most desirable. It often makes the difference between harm and benefit.

Probably our most troublesome parasites, excluding none, are the colon bacillus and the streptococcus, two organisms which chronically infect all, and play hide and seek in and out of our body apertures. Undoubtedly these organisms frequently fall into our blood stream where, fortunately, few foreign cells of any kind, when introduced singly, are able to survive, or at least to proliferate, as their entire surface is then exposed to the cell wrecking digestive power of those body enzymes usually present. Experimental ligation of the urethra in animals uniformly produces within twenty-four hours an infectious cystitis, usually associated with the colon bacillus, which is possibly an indication that a few bacteria, in a state of suspended vitality, stem the blood stream at all times, and, unless lodged in some place of lessened resistance or dissolved, are excreted into the bladder. So thoroughly capable and ubiquitous are these two organisms that we may suspect them of anything, and the literature shows that there is no organ, nor nook, nor cranny of the body where they have not been found.

Here are two cases of some interest in this connection: A heavily built, pale girl of sixteen, whose mother has just died from tuberculosis is brought in by her father for consultation. Her chest is examined; a few rales, with a seeming slight dullness at the right apex, a persistent afternoon temperature elevation of about a degree, nothing else to be found, yet what more is necessary to excite a suspicion of beginning lung tuberculosis? Patient is treated accordingly for some months, when, recollecting my neglect to obtain a specimen of patient's urine, I ask for it and am told that for about a year urination has been annoyingly frequent. A specimen supplied the next day shows colon bacilli in pure culture and large numbers, together with a natural accompaniment of a few blood cells and a little albumin. In six weeks an autogenous vaccine stops all urinary manifestations and the afternoon temperature completely disappears. Her general health improves so that I do not trouble anymore about her chest possibilities.

A relative of mine, some months after this, was greatly troubled with a severe vulvar pruritis which her Manhattan physician declared to be a neurosis and, after unavailing local and general treatment, suggested that the area be excised. Her horror and dismay were such as to drive her to me (and as you know what little faith our relations have in our professional ability,

perhaps from an inside knowledge of our imperfections, you may judge how desperate she thought her state). Guided by my experience with the case first detailed I found a mild streptococcus bladder infection, showing in the urine with masses of bladder cells covered with whorls of the offending organism. An autogenous vaccine worked wonders within two months, and during the two years since no itching has been complained of.

I shall not add quotations from medical literature, but everyone may find scores of reported cases of obscure pyrexia and urinary disturbances finally accounted for by bladder infection—most commonly with the colon bacillus, but sometimes with others such as a diphtheroid. I once had an X-ray picture taken of a man's left kidney-region, confidently expecting to see the shadow of one or more calculi as symptoms were very suggestive, several attacks, with intervals of two or three months, of local pain, fever of one or two degrees, albumin and blood cells in the urine. However, no stone-shadow appeared and as he had a bacilluria I offered to "jig" him, as the darkies say, with a hypo of autogenous vaccine but he absolutely refused the attention, and, poor fellow, had to get over his attack on Epsom salts, the only thing he would take.

The streptococcus is claimed by some to exist in almost as many varieties as Pittsburgh's pickles, but the most conservative bacteriologists are content with but one breed, which, as nowadays at least the breeze is not tempered to suit the shorn lamb, modifies to fit its varying surroundings, so much so as to give grounds for suspecting that the pneumococcus is but a modification as when the latter is injected into the blood of a rabbit it is stated to develop into long chain formations within the animal's liver, and Rosenow reports having produced a typical pneumococcus from a rheumatism strain of the streptococcus. But, however, this may be, it is of small importance therapeutically as with every different type of an organism we may produce a peculiar anti-serum, effective only with its like. This is the basis of the demand for autogenous vaccines.

I think that experimental medicine has demonstrated that this bacterium, the streptococcus, is the cause of rheumatic joint disease, so that whenever such appears symptomatically I look for the bug. I have records of sixteen cases, in five of which I got a successful plant from the blood; but, as I later renewed my stock of vaccine with organisms derived from the pharynx and continued the active immunization process with responses identical with those previously obtained, I felt certain that tonsillar organisms would do as well, and made vaccines accordingly for the eleven following. Responses were similar in all cases, and results uniformly good. Still as it is as easy to take a blood culture as to isolate the organism from the pharynx, and as when thus derived one feels more certain of its connection with the disease, this should be the routine practice. Of course we cannot always catch a bug in the blood at the first cast, but for the reasons stated it is best to try once or twice before going to the pharynx for our seed.

Whenever we have a case in which the area of suspected infection is beyond reach, or when the same cannot be localized or is general, there are many bacteriological methods available which are of great utility. If both a blood and a urinary culture fail

to disclose an organism which can reasonably be blamed for a given condition there are many infections which cause the body to develop special protective substances, enzymes able to digest the foreign material, that can be recognized on test. The familiar Widal agglutination in typhoid fever is an example in which the attempted digestion of the bacilli results in such a change in the physical characteristics of their capsules, possibly a coagulation, as to stiffen their flagellæ and to cause them to clump, the latter phenomenon evidently being similar to the clumping of the casein particles when milk is curdled by rennet. If the power of such a body enzyme be great enough, the precipitation of the infecting bacteria, which have given rise to its formation, is carried on to dissolution, as is the case with positive sera in the Pfeiffer test for cholera when the suspected serum is mixed with known vibrios and deposited in a guinea-pig's peritoneal cavity for an hour.

A more delicate test is that known as "complement fixation," in which the suspected enzyme (whose presence being peculiar to the disease tested for would prove its existence) is sought for by a test tube reaction, in which, I need only remind you, some of the suspected organisms are exposed to the action of the serum that is under investigation. If the specific enzyme be present it is absorbed by the parasites and, as in every such process a constituent of all blood serum (known as the complement) is used up, its disappearance proves the enzyme's presence. This disappearance is only recognizable by attempting another similar reaction, using an enzyme that has practically been separated from its blood serum (by heating the serum) together with some of the foreign cells that have caused this enzyme's production. To develop this enzyme red blood cells are used as they show plainly any reaction occurring. If the first reaction has occurred the second cannot, as that element present in all blood serums, the complement, will have been used up. This process is absolutely specific and enables us to differentiate between the most nearly related microbic infections so that in those cases where cultures of such organisms are available identification may be absolutely exact. It cannot be long before practical methods of applying the principle in the diagnosis of all infectious diseases will have been worked out. It is very successful, as you know, in gonorrhea.

The Wassermann reaction is of this nature, only that the enzyme upon whose presence it depends is more specific for the syphilitic state than for the spirocheta pallida, as it reacts better with normal tissues than with cultures of this germ. Of course, as every one knows, the Wassermann is a great help in diagnosis, but since experience has shown that it disappears last from the cerebro-spinal fluid (now known to be the safest place for any parasite) would it not be best to have this tested before discharging a patient as cured?

In primary syphilis Craig states that about 10 per cent. fail to give a positive Wassermann, 100 per cent. would probably show spirochetes, so why not let the microscope help out? The pallida never appears with scarletinal sore throats and other diseases which sometimes give positive Wassermans.

According to Noguchi, his luetin test is positive in fewer true cases of syphilis than is the Wassermann, but he will probably be able to improve it till it becomes as accurate as Von Pirquet's test

undoubtedly is in tuberculosis. The only thing that I have heard urged against the latter is that it is positive in 33 per cent. of all persons under sixteen and in 90 per cent. of all over that age. Truly a recommendation when we realize the extent of this malady and that from infection to clinical development an average case has probably twenty years to run.

Spinal puncture is such a routine affair nowadays that I doubt if anyone who had a case indicating acute involvement of the cord, would hesitate a moment before proceeding to it, as a meningococcus, a pneumococcus or a tubercle bacillus would indicate radically different treatment. Some rarer organisms that have been found in the meninges are those of the typhoid-colon group, the proteus group, Friedlander's bacillus, the influenza bacillus, and even a leptothrix. Here an immediate bacteriological diagnosis is essential for proper treatment, as Flexner's serum, although invaluable, naturally only digests the organism that stimulated its production in the horse.

The day of real specific treatment is rapidly approaching, but, with the exception of the wonderful luck that gave Empiricism quinine and possibly mercury, this is the direct consequence of growing familiarity with the cause of disease which, when of parasitic nature, can alone be approached and controlled through microscopical and bio-chemical investigations. What patient's case is unworthy of this? and what physician not interested enough to be sure, as sure as the early light of comprehensive science permits?

THE ANNUAL MEETING

OF THE

Associated Physicians of Long Island

WILL BE HELD ON

SATURDAY, JANUARY 31, 1914



EDITORIAL



CLINICS.

THE action of the Brooklyn Hospital in inviting the profession to attend medical conferences in its wards has been met with unexpected enthusiasm. Some four hundred physicians have requested that their names be included among those to be notified and a very large number attended the last conference. The Methodist Episcopal Hospital has also instituted a series of medical clinics that have been well attended. It is noteworthy that although all the hospitals have for a number of years made much of their operative clinics, the medical side has been neglected. This failure to emphasize the clinical side of internal medicine is striking, when one compares the eager interest that has followed the meetings of the Clinical Association of American Surgeons. In many hospitals the development of surgical work has far out-stripped the medical, and the glamour of surgical success has doubtless attracted the greater proportion of internes to take up surgery and neglect medicine. As a matter of fact the recent hospital graduate is probably little better fitted to attend the minor ailments and the chronic diseases that make up such a large proportion of medical practice, than is the recent graduate from a medical school who enters immediately upon active practice. This may in some measure explain the rapid growth of those sects that undertake to cure disease by manipulation, and whose greatest activity is directed towards those troubles that the general hospital reaches only in part. The visiting physician often finds difficulty in interesting his house officer in any but the acute ailments, such as pneumonia and typhoid fever, and finds it hard to inculcate the lesson that the average patient places fully as much emphasis on the treatment as on the cure. How few recent hospital graduates carry out with them the conviction that laparotomies will be scarce and opportunities for major operations rare! It may be that the attending physician is the one who has been at fault; he may have been perfunctory in his rounds; he may have neglected to emphasize the need for detailed care in every case; he may have shown interest only in the cases that interested him, forgetting that his attitude will influence the house staff whom he should teach; he may even be a therapeutic nihilist. In any or all of these phases he has fallen short of his responsibilities if he has failed to teach thoroughness and detail in every case under his care. The daily repetition of rounds is irksome, but the opportunity they afford for the clinical training of students in medicine cannot be overestimated and assiduous attention to this side of the clinician's work will result not only in the more thorough training of the younger men in the

private work that lies before them, but also will bring substantial benefit to the clinician himself by enhancing his reputation both as observer and teacher. Increased facilities for clinical observation, especially in small classes where the opportunity for personal observation is increased, should be multiplied. It would be well if every one of the metropolitan hospitals would follow the example already set and open their wards for the clinical study of internal diseases.

H. G. W.

THE NEW YORK STATE NAUTICAL SCHOOL.

SOME thirty-seven years ago the City of New York established a school of seamanship, made famous by the old School Ship "St. Mary," aboard of which hundreds of boys have been trained practically in seamanship and fitted for service as mates and masters in the merchant marine, while some have found service in the United States Navy and Revenue Cutters. In April last the Legislature enacted a bill by which the State took over the school and its training ship the "Newport" and opened its opportunities to all residents of this State. In consequence any boy between 16 and 20 years of age, of good moral character, may obtain in this public nautical school a thorough training in "navigation, seamanship, steam and electrical engineering" without expense other than his entrance fee of \$50 to cover the cost of uniforms during the two years' course. From November to April the schoolship is moored at the foot of East 24th Street, Manhattan. From the end of April until October she cruises in foreign waters, touching at various ports in Northern and Mediterranean Europe, Madeira and the Azores.

The opportunity thus offered for a thorough training, not only in seamanship, but in self-reliance and wholesome discipline as well should appeal to every boy who has read his Marryat and his Cooper or who thrills with Kipling when he

"Desires his sea, the vast and contemptuous surges,
The shudder, the stumble, the swerve, as the star stabbing bow-sprit emerges.

The orderly clouds of the trades and the ridged, roaring sapphire thereunder,

Unheralded, cliff-lurking flaws, and the headsails' low volleying thunder.

His sea, that his being fulfils."

Besides the stir and romance of it all there is a very practical side. The training leads directly into a calling that is by no means overcrowded. To become a mate in the usual way means years of knocking about before the mast, often under the worst of conditions, with promotion uncertain and opportunities for study few. Graduation from the Nautical School practically assures a position at \$40 a month and found. Diligence and sobriety will in a few years time lead to a master's certificate and \$2,500 a year.

There should be many boys who, if their thoughts were directed to the opportunity thus offered to enter a wholesome and time honored calling under such auspices, would eagerly seize upon the chance and find in it the fulfillment of their ambition.

H. G. W.

A STEP FORWARD.

UNDER date of June 10, 1913, the Council of the Massachusetts Medical Society made public its hearty approval and endorsement of the action of the *Boston Journal*. Dr. Mathew Hale, of that paper, communicated to Dr. Cabot the intention of the *Journal* to refer advertisements of patent medicines and questionable physicians to a medical board for approval, the decision of this board being final. This action supplemented the previous decision of the paper to supply medical news of unquestioned authority only. Since that time the Editor of one of the medical journals published in this city has been repeatedly consulted by a New York daily paper in regard to the propriety of publishing certain news items referring to medical matters. This attitude indicates a long step forward in clean journalism and is a hopeful sign for the future as it evidences the awakening of at least two influential daily newspapers to the unwisdom of lending the authority of their columns in disseminating apocryphal medical intelligence. When it is recalled that such great additions to medical knowledge as Roux's discovery of antitoxin, Koch's identification of the tubercular bacillus and Ehrlich's announcement of salvarsan were not placed before even the medical public until time and sufficient experience had demonstrated their worth, the tendency of a large portion of the American daily press to herald the immature statements of any enthusiast as a great medical discovery for the sake of providing sensation for its readers, shows pitifully in comparison. It may be liberty of the press but it seems much more like the unrestrained self-assertion of the callow school boy than the dignified assurance of experienced manhood. The example of the *Boston Journal* may be heartily commended as a pattern for at least one daily published in our own city, whose news columns seemingly welcome medical announcements, the accuracy of which may not infrequently be questioned. The announcements of births, marriages and deaths and the corporation notices published by the paper in question seem to be accurate.

H. G. W.

THE ANNUAL MEETING

OF THE

Associated Physicians of Long Island

WILL BE HELD ON

SATURDAY, JANUARY 31, 1914



Society Transactions



TRANSACTIONS OF THE BROOKLYN SURGICAL SOCIETY.

Stated Meeting, June 5, 1913.

The President, RICHARD W. WESTBROOK, M.D., in the Chair.

Complete Prolapse of the Rectum. Operation. Patient.

Reported by Dr. J. L. Bauer.

The patient is a German by birth, housewife, 49 years of age. She was referred to me in August, 1912. About two years before she was operated on for hemorrhoids. There was no improvement following the operation, but the patient steadily became worse. The hemorrhoids, so called, increased in size until a mass of 5 or 6 inches in length was protruded on attempt at defecation, and several inches were constantly dependant outside of the body. Blood, mucus discharge, loss of control of bowels, constipation at times, all the symptoms that we hear about, were found in this case. The patient became gradually very neurotic. She visited her surgeon occasionally and was rewarded with no examination and was always told she was a neurasthenic; that there was "nothing wrong." The patient could also, on extreme effort, force the neck of her uterus out beyond the vagina.

The patient was sent to the German Hospital. She was operated on first for complete repair of the cervix, cystocele and perineum, and then was turned on one side and a longitudinal incision was made from the coccyx to the anus, the bowel or rectum drawn out through this incision and incised down to the mucous membrane. The coats were then sewed up so that the margins of the incision came together transversely, and then the bowel was slung to the lower part of the coccyx. The fascia and skin of the wound were closed with silk-worm gut tied over a folded piece of wide-open gauze. The external sphincter had apparently been divided some time in several places. Probably it was torn anteriorly at confinement and then was divided laterally at the time of operation. A subcuticular kangaroo tendon was placed in the sphincter and drawn up so that the little finger only could be inserted into the rectum.

The patient recovered excellently, went home and was recommended not to do any heavy work, to move her bowels on a bed-pan and other such recommendations were made.

About a month later I was called to the house and I found a small projection of the mucous membrane, resembling a very small hemorrhoid was present. Several days afterwards we anesthetized the patient again and this time cauterized the posterior part of the rectum in four longitudinal lines and then incised down to the sphincter and carefully repaired and brought together the separated parts of the sphincter anteriorly.

Apparently, the patient has made a complete recovery. She moves her bowels on a bed-pan and after movement of the bowels she injects a little cold water into the rectum.

The patient is here and can be presented now if you care to see her.

The patient has lost most of her nervous symptoms and in every way she is in much better health.

Gastric Carcinoma. Operation. Patient.

Reported by Dr. J. L. Bauer.

Patient, Mr. B., American, 51 years of age. About fifteen years ago he began a typical book case of pyloric ulcer. He had his cures and he had his remissions. The patient was referred to me in January and was operated on January 18th. Lately, that is, before the operation, the patient had been complaining of very much pain and finally could only take fluids, and every morn-

ing, about 3 or 4 o'clock, the patient was obliged to get up and eject what he had in his stomach. Then he could return to bed and get some rest. There was a gradual loss of weight, weakness and some jaundice. The patient could not work any more.

The patient was sent to the German Hospital on the 18th of February, on a Saturday, and on Sunday, Monday and Tuesday he had his stomach washed out and an analysis was made, showing no free hydrochloric acid, some red blood cells, bacilli, etc.

The patient was operated upon Tuesday morning. An upper median incision was made and the stomach was found to be thickened and the pylorus almost completely obstructed with enlargement of glands; general extension through the lower half of the stomach. A posterior gastro-enterostomy was done.

After the operation the patient was ordered to be placed on one extra pillow every hour and as soon as he was out of the anesthetic to be given fluids.

On Wednesday morning, following the operation, the patient vomited a little watery mucus, but has not vomited since. The wound healed by first intention and the patient has gained 12 pounds in weight and returned to work in six weeks and has gained in strength and weight.

Large Round Cell Sarcoma of the Tibia. Operation. Bone Transplantation. Patient.

Reported by Dr. J. L. Bauer.

Mr. K., an American, age 44.

History.—Negative, so far as habits or heredity or anything like that would influence the present case, are concerned. Occupation, general utility man about house and stable. For three or four years the patient noticed a gradual loss of strength in the right leg, to which he paid no attention; that is, his right leg gradually became weaker than his left leg. He had no pain.

On December 23, 1912, while walking near home he felt as if the leg were going to give way. He leaned against an elevated pillar, a little later crossed the sidewalk and as his leg did give way, he braced himself on a fence and finally was carried home. He was examined and diagnosed shortly after by another physician as possessing a loose semilunar cartilage, but he was correctly put up on a long posterior splint. About five hours later I had the opportunity of seeing him and found that he had a fracture of his tibia extending from the inner border just below the internal tuberosity obliquely upward and outward into the joint, splitting off the internal tuberosity. The leg could be moved in almost any direction much more freely than normal. There was crepitus, crackling and extravasation of fluid with some blood into the superficial tissues below the site of the fracture. There was no pain at all, not even on motion. The outline of the tibia was apparently normal. The diagnosis made was a rarefying bone disease or gumma or sarcoma. The patient, after some deliberation, agreed to go to the hospital and was removed to the German Hospital of Brooklyn on December 26th. The temperature, pulse and respiration were normal. On December 27th an X-ray picture was taken which was unsatisfactory and showed an oblique fracture into the joint, and on the 30th another picture was taken which did not show up the bone condition. On December 31st the operation was performed by the usual longitudinal incision over the inner upper part of the tibia, avoiding the joint, the periosteum pushed aside and revealed tissue which could not be described as spongy or granulation tissue. You might call it spongy-granulation tissue, and with a knife one could cut out a piece of this tissue, which we did, about an inch and a half square, which made an excellent specimen for the pathologist. After thorough removal of this tissue it left the internal articular surface of the tibia as the only part of the piece fractured off. Just at the internal articular surface, posteriorly and externally above, the mass was covered only with periosteum. No compact bone was left. We enlarged our incision unawares downward gradually and when over half of the tibia had been curetted, leaving only a thin shell of bone, we came to some compact bone on the lower half of the tibia, which we cut and temporarily put in saline. A piece about 5 or 6 inches long was obtained. As the ankle was approached the disease diminished in extent laterally and apparently just above the ankle some normal cancellous tissue was removed. The operation was done without any constriction against hemorrhage. The piece for transplant was cut obliquely above and was pointed below and just about 4 inches below the knee-joint. On the outer side of the tibia was a little patch of compact bone which seemed to be a good place where the point of the transplant could be stuck, and we cut the transplant obliquely above to get

proper support for this articular surface. After apparently all the disease had been curetted we allowed the large periosteal cavity to fill up with blood and a closure of fascia and skin was made, painted with tincture of iodine, a dressing put on and a plaster case from the toes to the middle of the thigh. One week later a window, about $1\frac{1}{2}$ inches wide, was cut the length of the incision, an oblique right-angled incision, and the dressing underneath was removed. During this week he had no edema, nor did the patient have any temperature or increase in pulse. The dressings were somewhat saturated with blood and serum. The sutures were removed. The wound was cleaned and painted with tincture of iodine and some 2-inch gauze was folded the length of the wound and then some cotton placed above that to fill up the gap, and another thin shell or case of plaster Paris was put about the entire leg, but not over the window, and the leg then bandaged. After that, once a week, we dressed the wound. About once a week we removed the old dressing, which each time had a little serum or blood on it, and painted the wound again with iodine and again put on a dressing of plain 2-inch gauze. An X-ray picture was taken before the patient left the hospital, which was unsatisfactory. It was taken through the plaster case and did not even show the transplant at that time. It showed nothing.

About one week after the operation Coley's fluid was given, beginning with two minims, and continued every four days with no reaction, and at the present time the patient is getting it once a week, seven and a half to eight minims.

The patient was very slow to use crutches. He was very fearful that he would do some harm, but about two months ago I finally got him to attempt to use crutches and after a while he came downstairs. He was on the third floor of a flat house. On April 28th he was able to be taken to the hospital in the same conveyance, or at least he agreed to go at that time, and we had an X-ray picture taken which we will exhibit this evening. As yet he has not been allowed to walk without crutches, nor has he been allowed to bear much weight on the leg. Perhaps I have been a little bit slow about having him bear weight on the limb, but I will let you judge from the X-ray picture.

DR. J. B. BOGART, in opening the discussion, said:—"How was the implant retained?"

DR. J. L. BAUER, in discussion, said:—"The oblique upper surface of the transplant was placed just underneath the internal articulating cartilage and the lower end, which was pointed, was stuck into the compact bone on the external surface of the tibia. It seemed to hold fairly steadily.

"I was going to take a transplant out of the other tibia, but Dr. Warbasse came into the operating room and was watching me, and he recommended when I got down to that that I try this stunt, and I would like to know what you think of it."

DR. J. B. BOGART, in discussion, said:—"What was the pathological report?"

DR. J. L. BAUER, answering Dr. J. B. Bogart's question as to the pathological report on the above case and in discussing the case itself, said:—"The pathological report was that it was a large round cell sarcoma.

"I might also say that infection was taking place underneath this bone for transplant and the pathologist at the hospital, Dr. Laing, also reported large round cell sarcoma from that."

Giant Cell Sarcoma of the Tibia. Curettage. Bone Transplantation. Patient. Lantern Slides.

Reported by Dr. J. B. Bogart.

On August 21, 1912, there was admitted to my service in the Kings County Hospital a boy 12 years of age. He gave a history of having received a slight injury to his knee three weeks before admission, and when my attention was called to him he had an ecchymosis over the upper portion of his tibia. The tibia was tender at that point and there was some swelling. He was able to walk. We took some X-rays of the leg, which we will show you later. The X-rays are characteristic of that form of sarcoma which is known as the giant cell type. We proposed operation, but the parents of the boy objected and intended to take him away from the hospital, but owing to the advantage of having a good assistant, Dr. Moore, who spent the day with the family, the boy was finally brought to my office, from which I was able to transfer him to the Jewish Hospital and did the operation which I shall report to you later.

"The boy was admitted to the Jewish Hospital on the same day that he left the Kings County Hospital, which was on the 26th of August. On the 31st

of August I made an incision over the growth and found that it was just about to perforate the compact structure. The growth was situated in the upper portion of the tibia. I removed a portion of the anterior face of the bone after putting on an Esmarch bandage and disinfecting the leg, and very easily gouged out a mass of very soft tissue. The tissue in this case was not of the same color described in the giant cell sarcoma. The usual description is that it is the color of currant jelly. In this case it was lighter, but of jelly-like consistency. When the soft tissue was removed, it left only a shell of bone. The surface of the shell was uneven. It was smooth to the feel and the cavity would contain, I should suppose, three or four ounces. I packed the cavity with iodoform gauze, closed the wound, put on an extensive dressing and over that I placed a plaster of Paris cast, taking in the knee, and then removed the Esmarch, suspending the leg. There was no fever and no great amount of pain.

"One week later (I had partly sutured the wound) I removed the gauze, extended the incision down the leg on the same side and removed a transplant from the same tibia, the transplant, which was about a half-inch wide in its widest part, being continuous with the cavity. The transplant was between 4 and 5 inches long. You will see it in the picture which I shall show you presently. The transplant was turned on its edge and driven into the upper portion of the cavity from which it had been removed so that it was wedged in, and then it was driven up against the upper portion of the remaining portion of the tibia. My memory is that the epiphysis remained. In some of these cases the epiphysis is destroyed and in others the epiphysis remains, but the cartilage is not destroyed. If the epiphysis is destroyed, the cartilage remains. There was very little tissue between the upper portion and the graft as I remember more plainly. The lower portion of the graft was fastened with two silver wire sutures passing through the tibia from side to side and through the graft at the same time. The wound was closed without drainage and was dressed at the end of a week and the stitches were removed. As the stitches were removed there was some separation of the upper portion of the wound. I re-sutured that with silver wire because of the fact that I was going away and I did not want to run the risk of infection. There was a septic healing. We have made since then some extra plates showing the progress of the case. The boy was discharged from the hospital about the middle of January and has been walking around since."

DR. J. S. WIGHT, in opening the discussion, said:—"Was there much hemorrhage at the original operation from the site of that growth?"

DR. J. B. BOGART, in discussion, said:—"The Esmarch controlled the hemorrhage absolutely. The original dressings were pretty well saturated, but the subsequent dressings, which were applied once a week, were not. Where there is no Esmarch the hemorrhages are very profuse."

"My reason for presenting this case is twofold:

"This plan of treatment which we have adopted here is that which has been recommended by Bloodgood of Baltimore, although he, himself, has not done it, and, so far as I know, my case is the first one. It was operated before Dr. Bauer's case, although we have presented them simultaneously. My operation was done on the second of September.

"There are giant cells in very many sarcomata, but they do not have this characteristic picture. They are not so large as in this particular type of tumor, they do not contain so many nuclei, the nuclei are not so close together in the center, nor are the cells so large. The microscopical picture is characteristic. The X-ray picture with those little divisions showing the multi-focal character of it, is also characteristic.

"In connection with this case I have recalled very recently a case I saw some years ago and had forgotten about it. It was operated upon by Dr. Lewis S. Pilcher.

"This case is of very great interest in connection with Dr. Bauer's case. The pathological report in his case is a large cell sarcoma, not a giant cell sarcoma, and yet his treatment of it and removal of it are exactly the same as my case. While I would not like to question the report of his pathologist, I would like very much to see the slides, because I think you can say from what you have seen and heard this evening that the tumors must be identical, except that his tumor showed a greater tendency to spread along the shaft of the bone. I intended to show for contrast a case of sarcoma of the os calcis of the small round cell type that also appeared in my service in the Kings County Hospital. This case was admitted in the orthopedic service at first. The patient complained of pain in the heel for over a year and she is reported to have had some swelling in the heel. When she came to the hospital she complained of pain

in the heel (she was an English girl, 34 years of age), but there was no swelling and she was strapped with adhesive plaster and a plaster cast was applied, apparently under the idea that the trouble was due to some lack of support of the arch. At a later period an X-ray plate was taken and it is very interesting. She was not under our care when this plate was taken. She was afterwards transferred from the Orthopedic Department to us. We think that this plate shows the beginning of the change in the bone, but it was not recognized by the orthopedist at the time and nothing was done about it except to put it up. The foot was covered by a dressing which was taken off by the interne in the dispensary, and although there was no swelling of the heel when it was put up, when it was taken down the heel was discovered to be swollen and the interne made an incision through the soft tissues and then this picture was made. You can see what a change has taken place in this. This picture was taken just a few days before the operation, which was on the 28th day of October. Two months later the leg was amputated. I have brought here two other pictures of normal os calces to show the contrast.

"At the same time that the leg was amputated there was found to be enlargement of the inguinal glands on the same side, which we removed for examination and they also showed round cell sarcoma. We knew we were not going to cure the patient, but wanted to get rid of the fungus growth of the foot.

"The patient remained in the hospital until November 29th, one month, and during the last week of her stay complained of some pain on the right side of the chest. She was admitted to the Jewish Hospital three weeks later; that is, on the 22d of December, where she was found then to have the right side of the chest full of fluid. The left side showed some trouble, too. The fluid was aspirated, but no sarcomatous cells were obtained from it after three aspirations, but the X-ray pictures taken of both sides of the chest showed that the lung on the opposite side was infiltrated and a diagnosis was made of metastatic sarcoma of both lungs. The patient died on the 13th of January. The progress of this case was very rapid.

A number of papers have been written based upon a very careful study of a number of cases, notably one by Nancrede,* in which he reported 65 cases of complete removal of the scapula for sarcoma. He reported that only one patient was alive, but before the meeting was over (the paper was read at the American Surgical Association) he learned that the patient was no longer living, so that no case was alive when he read his paper about two years ago, and Coley's researches have showed the practical hopelessness of extensive amputation for the ordinary type of sarcoma. It is only fair to say that Coley has the records of a great many cases. The last number I saw, I think, was 60,000 cases of various types of sarcoma that have applied for treatment, some before and some after operation, by his toxins, but equally strange is the fact that reports of a number of others trying the toxins are to the effect that they have had no permanent success. They have seen the tumor improved temporarily, but not cured. Coley advocates using the toxins after operation. Bloodgood says his cases of giant cell sarcoma have done as well without toxins as Coley's with them."

Gastric Carcinoma. Operation. Patient.

Reported by Dr. J. L. Bauer.

DR. J. L. BAUER, in discussion, said:—"I might add, owing to the fact that some of the doctors spoke about the mass, that we could not feel any, but at the operation there was found as near what you call a mural carcinoma as anything that I know of, decided thickening of the lower half of the stomach principally, but over the lesser curvature of the stomach also, and almost an entire closure of the pylorus. That was quite large. I have not felt the mass since. I did not before the operation."

DR. J. B. BOGART, in discussion, said:—"It looks as if this would turn out to be one of those cases of carcinoma of the stomach that get well after gastro-enterostomy. Dr. William J. Mayo, during my recent visit, had been going over his carcinomas of the stomach and found a number of cases which, after a palliative gastro-enterostomy had been sent home to die, and he found out several years afterwards that they were still alive and well. I am hoping Dr. Bauer's case will turn out, for the sake of his patient and him, too, to be of that class. We never can be sure."

DR. R. W. WESTBROOK, in closing the discussion, said:—"I have the same hope. Since seeing this patient I have made a diagnosis positively in my own

* *Annals of Surgery*, Vol. 50, page 1.

mind in two cases where I thought there was mural carcinoma present, both of whom are well today after gastro-enterostomy."

**Giant Cell Sarcoma of the Tibia. Curettage. Bone Transplantation.
Patient. Lantern Slides.**

Reported by Dr. J. B. Bogart.

DR. ROBERT E. MOORE, in opening the discussion, said:—"Dr. Bogart made the remark that the X-ray picture in the giant cell sarcoma is characteristic. I do not think that that is so.

"Dr. Bogart also makes the statement that myeloma and giant cell sarcoma are one. That statement is found in the literature also, but if we look up myeloma under that topic you will find frequently a tumor described which is altogether different. In the February number of the *Annals of Surgery* of this year there is an article by an Englishman wherein it is stated that they are synonymous and that they are alike. In osteomalacia there is profound evidence of toxemia. The tumor mass is not a giant cell tumor, but a round cell sarcoma. It does invade the bone. In much the same way it causes spontaneous fracture. The X-ray picture is the same, but the tumor is not benign.

"I do not believe it is necessary to feel that Dr. Bauer's case was a similar case to that of Dr. Bogart. I think it may possibly be one of these cases of myeloma which I just referred to since they are round cell sarcoma and particularly since it has invaded so much of the tissue. I think Dr. Bogart also mentioned that these tumors sometime perforate the bone capsule, but he did not state that the tumors do invade the soft tissues. The operation must include the removal of the soft tissues.

"It has been argued by some that these tumors, are not growths at all, that they are a sort of form of chronic granulomata, but certain it is the tumor does occur in the soft tissues. If the tumor is removed from the bone and any of the cell tissues characteristic of the tumor are left in the soft tissues, they recur there as a typical giant cell tumor."

**Large Round Cell Sarcoma of the Tibia. Operation. Bone Transplantation.
Patient.**

Reported by Dr. J. L. Bauer.

DR. J. L. BAUER, in closing the discussion, said:—"I might have stated, as several of the doctors who saw the specimen wanted to make a myeloma out of it, that there was a good deal of searching of the cells for that diagnosis, but it was impossible to find any giant cells, and we had a specimen taken at least an inch and half square from the upper part of the tibia, another one taken in the lower half, and a smaller specimen for the slides. The structure of it was what we chose to style angiosarcoma and the large round cells with the fibrous tissue was the general appearance of it. The cartilage was all that was left. There was no epiphysis.

"The use of Coley's fluid was suggested to me by a surgeon in the city, who said it would not do any harm and might prevent a recurrence.

"In Keen's Surgery, second or third volume, in an article on Tumors of the Bone, myeloma is spoken of and the doctor who writes the article speaks of myeloma as the most malignant of bone tumors and states that no pain is present in those conditions, although we know of reports where there has been some pain, and he also speaks of the presence of an albumo-serum (Dr. Bogart did not mention that in his case), and then speaks of other sarcomata and talks about the giant cells being present in some of the sarcomata, but he does not refer to giant cell sarcoma as a myeloma."

**Giant Cell Sarcoma of the Tibia. Curettage. Bone Transplantation.
Patient. Lantern Slides.**

Reported by Dr. J. B. Bogart.

DR. J. B. BOGART, in closing the discussion, said:—"I will say for my very able assistant that I encouraged him to come here tonight and attack me so you will understand that we are still on good terms.

"Of course, the myeloid type includes others besides this giant cell tumor. I won't go into the discussion of myeloid tumors in general, but only of this particular type which is now being classed among the myeloids and which has been placed there by so able a man as Adami, and I think you will all agree with me that there isn't any one in this country who is entitled to more considera-

tion than Adami. I will read you an extract from his work in which he says he does not mention this except that it has been taken out of the class of sarcomas and transferred to myeloma. I am aware that there are myelomatous tumors that are malignant, but I wanted to, as I said in the beginning, do two things, to show a case in which I had followed the advice of Bloodgood, and it seemed to me it required some courage to simply content myself with curetting and taking a bone graft from the same side, and to show you that it had been successful so far, and, also, that we might not make the mistake of unnecessarily amputating a leg as others have done.

"If I have not succeeded in making this particular type of tumor perfectly clear so that any of you can either make a diagnosis at once from the X-ray picture or from what you can find out about it, then I haven't succeeded in doing what I undertook this evening."

DR. J. S. WIGHT, in opening the discussion, said:—"Was there much hemorrhage at the original operation from the site of that growth?"

Gastric Carcinoma. Operation. Patient.

Reported by Dr. J. L. Bauer

DR. R. W. WESTBROOK, in closing the discussion, said:—"I have the same hope. I have made a diagnosis positively in my own mind in two cases where I thought there was carcinoma present, both of whom are well today after gastro-enterostomy."

Medical Society of the County of Kings

MONTHLY BULLETIN TO MEMBERS

DECEMBER, 1913

MINUTES OF THE 93D ANNUAL MEETING OF THE MEDICAL SOCIETY OF THE COUNTY OF KINGS, HELD DECEMBER 16, 1913.

The President, Dr. James M. Winfield, in the chair.

There were 584 members present.

The meeting was called to order at 8.45 P. M., and the minutes of the previous meeting were read and approved.

Report of Council.

The Council reported favorably upon the following applications for membership:

Wm. Byron Agan, 981 E. 14th St.
Wm. Howard Barber, 905 Union St.
H. Wright Benoit, 442 Grand Ave.
Helen Dudley, 123 Joralemon St.
David Feiner, 216 S. 3d St.
Thos. Bernard Kenney, 408 Westminster Road.
Henry John Kohlmann, 532 State St.
Francis Wm. Moore, 898 Sterling Pl.
Jacob Mauritz Morin, 1115 Bergen St.
Julius M. Nova, 1 Hanson Pl.
Samuel Parnass, 1218 Herkimer St.

John H. Schall, 119 St. Marks Ave.
Wesley G. Simmons, 986 Greene Ave.

Applications for Membership.

Applications for membership were received from the following:

Gerhard W. Heuser, 560 McDonough St.; Cornell, 1904; proposed by J. W. Stevens; seconded by J. A. Ferguson.

Wm. Crawson Jayne, 1161 Gates Ave.; L. I. C. H., 1910; proposed by Alfred Bell; seconded by F. J. Monaghan.

Samuel James Post, 1857 63d St.; L. I. C. H., 1912; proposed by E. C. Rose; seconded by H. A. Morris.

Constant E. Schradieck, 21 Hanson Pl.; Univ. Rostock, 1900; proposed by W. A. Northridge; seconded by Memb. Com.

Robert Schulman, 237 Rutledge St.; P. & S. N. Y., 1906; proposed by R. S. Fowler; seconded by Memb. Com.

Marcus F. Searle, 775 Washington Ave.; N. Y. Homeop., 1911; proposed by C. F. Barber; seconded by Memb. Com.

Scientific Session.

1. Paper: "Studies in Trichinosis."
By Joshua M. Van Cott, M.D.
Discussed by Robert G. Eccles, M.D.,
Emma H. H. Antonius, M.D.
2. Paper: "A Consideration of Our General
Anesthetic Agents, Ether and Nitrous
Oxide—Oxygen."
By William C. Woolsey, M.D.
Discussion opened by A. F. Erdmann,
M.D.
3. Paper: "The Choice of a Method for Cor-
recting Retrodisplacements of the Uterus."
By Albert M. Judd, M.D.
Discussion opened by Charles C. Bar-
rows, M.D., of Manhattan.
4. Paper: "The Diagnosis of Cancer of the
Breast."
By John E. Jennings, M.D.

*Executive Session.*REPORT OF THE WAYS AND MEANS COMMITTEE
OF THE MEDICAL SOCIETY OF THE COUNTY
OF KINGS.

Several meetings of this Committee have been held and the following officers elected: Dr. J. M. Winfield, Chairman; Dr. S. J. McNamara, Treasurer; Dr. Warren L. Duffield, Secretary.

Various plans for enlarging the present building and for the acquiring of additional property are under consideration.

Conferences with the architect of the present building have been held and tentative plans for additions and enlargements have been made and are being considered.

Plans for raising the necessary funds are also receiving careful consideration.

Respectfully submitted,

WARREN L. DUFFIELD,

Secretary.

It was moved, seconded and carried that the foregoing report be received and placed on file.

REPORT OF COMMITTEE ON REVISION OF FEES.

*Statement of the Usual Fees for Medical
Services in Kings County.*

The Chairman, Dr. L. S. Pilcher, submitted the following report:

The fee bill, as adopted in November, 1894, was found to be, with few exceptions, adapted to present needs.

These rates have no reference to cases in which special skill or special responsibility are involved.

Advice, office	\$1.00 to	\$10.00
Advice, letters of	5.00 "	15.00
Visits, ordinary	2.00 "	5.00
Hurry calls, fixed hour visits, visits between 7 and 10 P. M.	5.00 "	8.00
Visits, night (from 10 P. M. to 7 A. M.).....	5.00 "	20.00
Consultation in office	15.00 "	25.00
Consultation out of town....	50.00 "	250.00
Consultation at abode of pa- tient	10.00 "	50.00
Visits on board a vessel at wharf	5.00 "	10.00

Visits on board a vessel in
stream\$10.00 to \$20.00

When several patients are treated at the same visit, the usual fee is charged for the first and an office fee for each extra patient.

Detention, per hour.....	3.00 "	10.00
Absence day and night from town	50.00 "	150.00
Obstetrical cases, ordinary....	10.00 "	100.00
Obstetrical cases, tedious (over 24 hours)	25.00 "	150.00
Obstetrical cases, complicated.	50.00 "	200.00
Obstetrical cases, instrumental	30.00 "	300.00
Miscarriage, same fee as for labor at term.		

Vaccination 2.00 " 5.00

Administration of anesthetic.. 5.00 " 25.00

Execution proof of death for
insurance 5.00 " | 20.00 |

Executing certificate for com-
mitment of insane..... 25.00 " | 150.00 |

Physical exploration of the
chest 5.00 " | 20.00 |

Urinary analysis, or micro-
scopical examination 3.00 " | 10.00 |

Passing catheter 5.00 " | 20.00 |

Reduction of dislocation..... 10.00 " | 100.00 |

Fracture, simple, primary
dressing 10.00 " | 75.00 |

Fracture, compound, primary
dressing 75.00 " | 300.00 |

Paracentesis, abdominal or
thoracic 25.00 " | 100.00 |

Passing urethral sound 3.00 " | 10.00 |

Surgical operations:

Minor 10.00 " | 100.00 |

Major 100.00 " | 1,000.00 |

Subsequent attendance in sur-
gical cases to be charged
for.

Post-mortem examinations.... 10.00 " | 100.00 |

It was moved, seconded and carried that the
foregoing report be adopted.

REPORT OF COMMITTEE ON PUBLIC HEALTH
EDUCATION.

Report of Committee on Public Health Education among Women of the American Medical Association and of the Medical Society of the County of Kings, for the year 1913, Dr. Eliza M. Mosher, Chairman.

Meetings held 13 | |

Attendance, approximately 1,800 | |

Places.

Greenpoint Settlement 1 meeting | |

Willow Place Chapel..... 1 " | |

Atlantic Avenue Chapel..... 2 meetings | |

Girls' Friendly Society of Trinity
Church 2 " | |

Brooklyn Heights Parents' Club... 1 meeting

Mothers' Clubs 3 meetings | |

Public Schools 3 " | |

Subjects.

The Care of Our Girls.

What All Girls Should Know.

The Mother's Responsibility for the Health
and Happiness of Her Daughters.

The Nervous System and Its Care.

Digestion.

Foods and How to Prepare Them.

Two Hygiene Plays given by the pupils of Public School 141.

It was moved, seconded and carried that the report of the Committee on Public Health Education be accepted and placed on file and the committee be continued.

REPORT OF COMMITTEE ON PUBLICITY.

To the Medical Society of the County of Kings.

The Committee on Publicity has the honor to report as follows:

Since the appointment of the Committee the daily press of this city has been singularly free from self-exploitory articles by physicians.

It is most gratifying to relate that two leading newspapers, the *Brooklyn Daily Eagle* and the *New York Press*, have availed themselves of the advice of the Committee regarding the publication of communications of a suspiciously doubtful character. It is also pleasing to add that prominent members of this Society who contemplated submitting contributions on medical subjects to the lay press consulted the Committee on the propriety of their proposed action, stating at the same time that they desired to be guided by the advice of the Committee. A most satisfactory agreement followed in each case. When it became plain to the medical profession of this city that the Publicity Committee advocates the publication of articles relating to medicine of value to the community, that it is neither inquisitorial nor prosecutory, that its duties are simply advisory, the wisdom of your appointing this Committee will appeal to every member of this Society who holds loyalty to tradition about momentary, ephemeral notoriety.

Signed:

JOHN C. MACEVITT, M.D., *Chairman*,
JOSHUA M. VAN COTT, M.D.,
FREDERICK TILNEY, M.D.,
Committee.

It was moved, seconded and carried that the report of the Committee on Publicity be received and placed on file and the Committee continued.

Dr. Briggs discussed the report. Dr. Dixon moved that the Committee be discontinued. Not seconded. Dr. Junor discussed the report.

REPORT OF THE COMMITTEE ON DUES.

The Committee, after careful and painstaking investigation of the subject, find that it would not be feasible or wise to make such a class distinction as would be attendant upon any discrimination in favor of junior members, in the matter of dues.

We therefore recommend that the suggestion to lower the dues to recent graduates be not adopted.

Signed: CHAS. N. COX, *Chairman*,
EDWARD E. CORNWALL,
STEPHEN H. LUTZ,
Committee.

It was moved, seconded and carried that the foregoing report be adopted.

THE TREASURER'S RECOMMENDATION.
Recommendation.

I recommend that the dues for the ensuing year be:

For Active Members, ten dollars, with three dollars additional to meet the annual assessment of the Medical Society of the State of New York; and

For Corresponding Members, three dollars.

Signed: STEPHEN H. LUTZ,
Associate Treasurer,

Medical Society of the County of Kings.

It was moved, seconded and carried that the Treasurer's recommendation be adopted.

The Flatbush Medical Society presented the following resolutions:

"*Resolved*, That the Medical Society of the County of Kings, in meeting assembled, protest against the manner of enforcing the present traffic laws; that whereas members of this Society have been summoned to court and there fined \$25 or more on the word of a policeman that a speed of 22 miles per hour was maintained while driving an automobile; that these arrests and fines are practiced not because of reckless driving but entirely because of the rate of speed; therefore this Society herewith protests against such uncalled-for and drastic interpretation of the law. Be it further

"*Resolved*, That a copy of this resolution be sent to the Board of Aldermen, the Commissioner of Police and to Mayor-elect John P. Mitchell."

Respectfully,

Signed: THOMAS B. HEGEMAN,
President, Flatbush Medical Society.

It was moved, seconded and carried that the foregoing resolutions be adopted.

The following resolutions were presented to the Society:

WHEREAS, Resolutions have been passed by the Medical Society of the County of Cortland, recommending the establishment of a State Department for the prosecution of illegal practitioners in the various counties in the state, and

WHEREAS, In the opinion of the Medical Society of the County of New York the establishment of such a department would be prohibitive in cost, the expense in New York County alone being far in excess of the estimate for the entire state in the aforementioned resolution, and

WHEREAS, In the opinion of the Medical Society of the County of New York the prosecution of illegal practitioners can best be done by individual county societies, for the reason that they are most familiar with the necessities of the work in their own county, now, therefore, be it

Resolved, That it is the opinion of the Medical Society of the County of New York that the interests of the profession, the county societies and the State Society will be best conserved by the prosecution of illegal practice by each county, and be it further

Resolved, That a copy of these resolutions be sent to every county society in the state with the request that the delegates be instructed to vote against the establishment of any such bureau.

Signed: BROOKS H. WELLS, *President*,
JOHN VAN DOREN YOUNG, *Secretary*.

WHEREAS, Resolutions have been passed by the Medical Society of the County of Cortland, recommending the publication of the Directory bi-annually, and

WHEREAS, In the opinion of the Medical Society of the County of New York this would not be in the best interest of the Medical Society of the State of New York for the following reasons:

The Directory is of great value in keeping a correct roster of the legal practitioners of the state and should be issued full and complete each year.

The number of changes in the Directory each year is very great, comprising as they do changes in the personnel of the profession in the three states. The officers of the societies, hospital and dispensary appointments, and the other information contained in the Directory which adds great value to the publication, must, in order to have it accurate, be compiled each year. The amount the Society would lose in advertisements and in sales off years cannot be calculated, but would undoubtedly be a serious matter and might add to the cost of the Directory in other years.

The printing of the changes in the personnel of the profession on the alternate years, and the distribution of the same, would cost a sum that would vary from year to year but the saving would not, in the opinion of the Medical Society of the County of New York, compensate for the disadvantage to the members of looking up names and other data in both the original and the addendum. Now, therefore, be it

Resolved, That the Medical Society of the County of New York is strongly in favor of the publication annually of the Directory of the Medical Society of the State of New York, New Jersey and Connecticut, and be it further

Resolved, That the Delegates of the Medical Society of the County of New York be instructed to use every effort to have the Directory published annually, and that a copy of these resolutions be sent to every county society in the State of New York with the request that they do all in their power to continue the annual publication of the Directory.

Signed: BROOKS H. WELLS, *President*.

JOHN VAN DOREN YOUNG, *Secretary*.

It was moved, seconded and carried that the foregoing resolutions be referred to the Delegates to the State Society.

Election of Officers.

At 9.45 P. M., the chair announced the closing of the polls.

At 2.45 A. M., the tellers presented the following report:

Total vote cast, 584.

For President, J. Richard Kevin* received 574.

For Vice-president, Henry G. Webster received 248, Russell S. Fowler* received 327. Defective ballots, 9.

For Secretary, Burton Harris* received 322, C. Eugene Lack received 242. Defective ballots, 20.

For Associate Secretary, Charles E. Scofield* received 584.

For Treasurer, Sylvester J. McNamara received 254, Stephen H. Lutz* received 307. Defective ballots, 23.

For Associate Treasurer, Robert L. Moorhead* received 313, James P. Glynn received 228. Defective ballots, 43.

For Directing Librarian, Frederick Tilney* received 584.

For Censors, Henry A. Wade received 239, Earl H. Mayne received 228, Eliza M. Mosher received 179, Siegfried Block received 158, Burt D. Harrington received 226, John G. Williams* received 311, Charles Eastmond* received 391, J. Studivant Read* received 330, John A. Lee* received 326, Walter A. Sherwood* received 356. Defective ballots, 32.

For Trustee, James M. Winfield* received 571.

For Delegate to the Medical Society of the State of New York for the year 1914, Charles E. Scofield* received 583.

For Delegates to the Medical Society of the State of New York for two years, 1914-1915, Claude G. Crane* received 414, Henry M. Smith* received 436, Edwin A. Griffin* received 414, Martha J. Peebles received 267, James M. Winfield* received 429; Walter D. Ludlum* received 456, Geo. R. Hawley* received 427, William Browning* received 470, Albert M. Judd* received 469, Edward E. Cornwall* received 460, Leo J. J. Commiskey received 325, William J. Cruikshank* received 397, James W. Ingalls* received 359. Defective ballots, 89.

For 23 Alternate Delegates for one year, William C. Braislin* received 577, James C. Hancock* received 581, Paul M. Pilcher* received 579, J. Sturdivant Read* received 577, John E. Sheppard* received 580, Walter Truslow* received 579, James P. Warbasse* received 582, Charles Eastmond* received 581, Russel M. Rome* received 579, Henry A. Fairbairn* received 582, Henry G. Webster* received 581, John A. Lee* received 577, Burton Harris* received 577, Henry M. Moses* received 576, Geo. D. Hamlin* received 579, Henry A. Wade* received 579, William Linder* received 569, Russell S. Fowler* received 574, Sylvester J. McNamara* received 572, Robert F. Barber* received 578, Alfred Potter* received 571, Warren S. Shattuck, Jr.* received 574, Alfred Bell* received 576.

Meeting adjourned at 3 A. M.

CLAUDE G. CRANE, *Secretary*.

* Declared elected.

LONG ISLAND MEDICAL JOURNAL

VOL. VIII.

FEBRUARY, 1914

No. 2

Original Articles.

THE DIAGNOSIS OF CANCER OF THE BREAST.

By John Edward Jennings, M.D.,

of Brooklyn, N. Y.

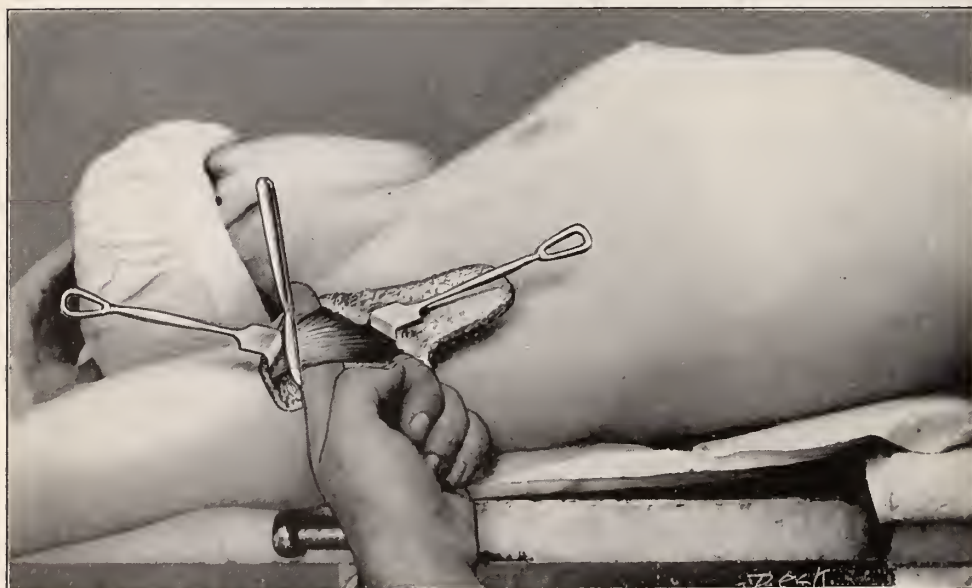
THE operative treatment of cancer of the breast will have one of two justifications in the light of the end result. Either it will have effected a cure or else the free interval before recurrence comes will have been sufficiently long to materially lengthen life, and the period of local growth, if such recur, will be shortened. Not many years ago the latter was the reason fr nkly urged for operation. In illustration of this attitude I cannot do better than to quote John Birkett in Holmes System of Surgery, writing in 1871. He is discussing removal with the knife instead of caustics, which he reserves for special cases, but says: "In comparing the results of the two methods upon the constitutional progress or local relapse of the disease, there is not sufficient evidence in favor of one over the other. Both are commonly followed by a development of cancer, either in the region first affected and its vicinity or new centers of growth become established in distant parts." And again—"I cannot conclude without urging the expediency of removing the first growth of cancer in select cases. I do so upon the firm conviction, based upon experience, that by so doing life *may* be prolonged; a certain amount of immunity from bodily suffering and mental distress is given and that when unhappily the recurrence of the disease gives rise to ulceration, the duration of the distressing state of affairs is shortened."

At that time cancer was considered a constitutional disease and any local interference was merely intended to be palliative. But Mr. Birkett was behind the best thought of his time for Moore had published, four years before his paper "On the Influence of Inadequate Operations on the Theory of Cancer." He taught that cancer is at its beginning and for some time a purely local disease, that if it be entirely removed it will not recur, and that to remove it all requires that the breast and all involved tissues, skin, fat, fascia, pectoral muscle and lymphatic glands, be removed with it *en masse*. They did not accept his views in London, but Volkmann and his followers did—and began to cure cancer. Gross, the younger, began the practice in this country in 1878-79, and Banks, in Liverpool in 1882. This is not the place to describe the brilliant development of the radical operation by Halsted, Bull, Meyer and others. The results show that in an

* Read before the Kings County Medical Society, December 16, 1913.



LINE OF INCISION



SECOND STEP

increasing number of comparatively early recognized cases a cure may be obtained.

Just what this amounts to is clearly shown by the returns from 1,194 cases reported by various operators at the Congress of American Physicians and Surgeons in 1907; the percentage of three-year cures in this series was 38. In the light of the absolute hopelessness of the disease at any stage forty years ago, this is very encouraging.

But more stress would seem to be laid upon extensive operation than upon early diagnosis, and perhaps the medical man has been somewhat unduly cheered by the optimism of the surgeon who too seldom sees clearly at the time of operation, the distinction between palliation and cure.

The surgeon now attacks a cancer of the breast, except in advanced stages, with the hope at least of a cure. The prolongation of life and the amelioration of suffering he accepts as bye-products. I think the laity hardly follow him, and who can blame them. Surely the despair of the patient when she is told before operation that she has a cancer, seems, even in the light of the best statistics, a very reasonable frame of mind. Is it too much to say that the symptoms upon which a diagnosis is too often based are all of them late from the patient's point of view?

The proportion of cures has been shown to depend on the extent of the operation; it will also be found to vary with the stage and variety of the disease.

The difference in result in early and late cases is well brought out by the statistics of Höring on 200 cases from the Katherine Hospital in Stuttgart. He divides the cases into three groups thus:

GROUP I.—Cases with apparently very slow growth. The tumor is only a centimeter in size, lying as yet altogether in the gland; at least the skin is not yet fixed. In the axilla one or more small glands are usually first discovered at operation. In this group 76 per cent. passed three years without recurrence.

GROUP II.—Cases with distinct nodular growths, which have been for some time stationary but have begun to grow. The tumor is adherent to the skin or deeper parts. Glands were distinctly demonstrated in the axilla. 28 per cent. of these cases are free from recurrence.

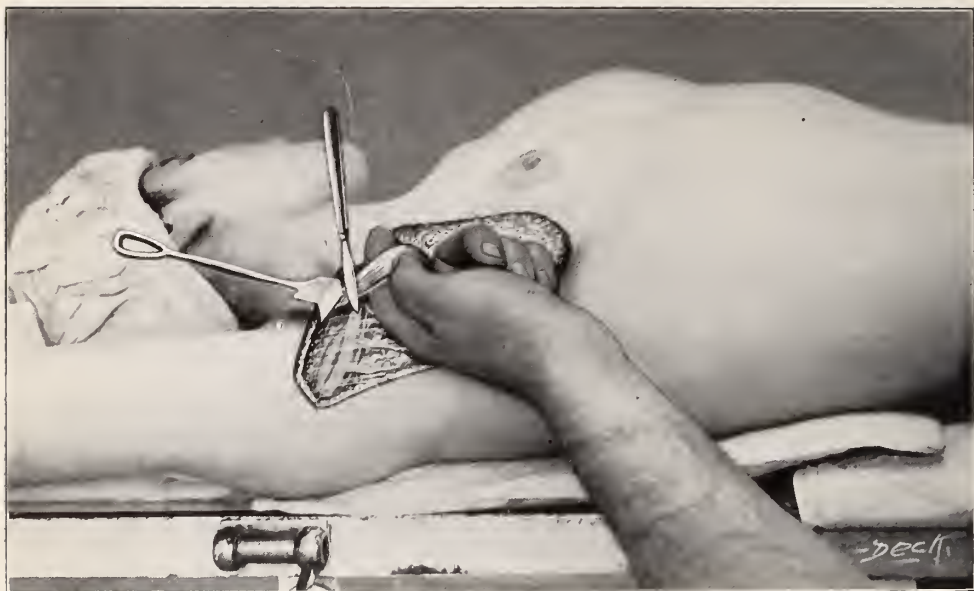
GROUP III.—Cases in which the greater part of the breast is affected. The tumor firmly involved with skin and deeper parts and often even the supraclavicular glands are diseased—none of these are alive.

The third group is evidently a limbo of hopeless cases, but the difference, I and II with 76 and 28 per cent. is evident.

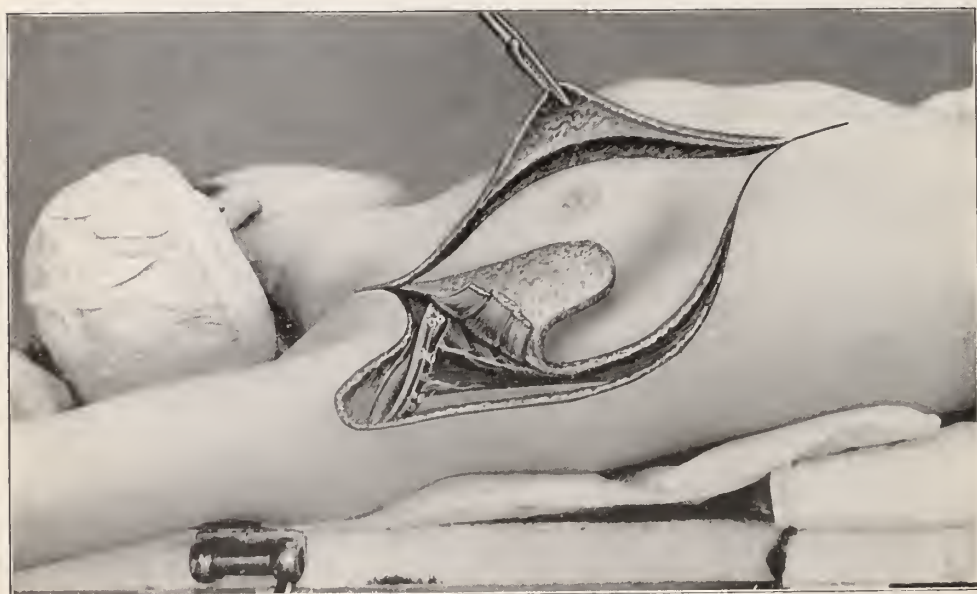
In somewhat the same way Warren classifies 100 cases, by stages as follows: "The first stage includes all cases in which the disease still remains practically in the condition in which it was when first discovered by the patient. This is characterized by the presence of a lump in the breast from one to two inches in diameter, and usually one or more perceptibly enlarged glands in the axilla."

Note that this first stage is somewhat more advanced than Höring's. In this class there were 42 per cent. of cures.

"The second stage marks the beginning of the period of visible activity of the growth. The nodule which has remained for months quiescent begins gradually to increase in size, the skin to become adherent, and the glands to show themselves more plainly in the axilla.



THIRD STEP



FOURTH STEP

The patient now for the first time alarmed seeks advise. This accounts for the very large number of cases operated upon in this stage, between one-third and one-half of the total number. There was 17 per cent. of cures in this class."

"In the third stage are included all cases which have advanced beyond the immediate neighborhood of the primary focus, and have involved adjacent regions either by direct extension or metastasis. In such a category should be placed all cases which involve the whole breast or tissues contiguous to the mammary gland, such as the muscle, skin, elsewhere than in direct contract with the growth or the fasciæ—as well as the various metastases. Spreading of the infection to the glands above the clavicle would alone constitute a condition necessary to place the disease in this class even though the primary focus had changed but slightly. There were 5 per cent. of cures in this class."

These classifications of stages and results illustrate about what surgery is able to accomplish when the diagnosis is made before operation. In a series of 25 cases of malignant disease of the breast in which a clinical diagnosis could be made in the Surgical Clinic of the John Hopkins Hospital and on which an exploratory incision was performed, there was but one death (Bloodgood). That is 96 per cent. of the patients are well over three years. One need not point the moral that these stories bear; they speak for themselves.

There is another factor, however, in the curability of cancer, the nature of the growth itself, and it will repay us now to turn for a moment to the discussion of the pathology of the disease and consider its varieties with their varying malignancy and the ways in which they make themselves clinically evident.

The classifications of carcinoma of the breast are many and each pathologist has a somewhat differing nomenclature. For our purposes a simple classification into scirrhus, medullary, adenocarcinoma and cancer cysts will serve. The scirrhus and medullary differ in the relation of cells to stroma; the medullary being comparatively soft and cellular, the scirrhus, fibrous and hard; clinically all degrees of variation are found between them, the distinction is one of degree, although manifest enough at either end of the series. The medullary or soft cancer is generally considered the most malignant form (7 per cent. cures—Warren). As usually seen it forms a well-defined mass with rapid growth well under way, somewhat more apt to occur in the breast of younger women. It is not encapsulated but is well marked off from the surrounding tissue. It does not retract the nipple nor pucker the skin and readily ulcerates forming sometimes large flabby fungating masses like sarcoma.

Some of the cases studied by Bloodgood seem to have found it early in a stage of transition from an adenocarcinoma. These transition cases have a better prognosis than the pure medullary growth.

The scirrhus tumor may occur as a circumscribed nodule when it cannot be recognized without section and is often mistaken for a benign growth; or much more often as an infiltrating growth, when it causes comparatively early the retraction of the nipple and dimpling of the skin that entitles it to recognition as a malignant tumor. It is to be noted here also that Bloodgood reports three cases of scirrhus mixed with adenocarcinoma in chronic cystic mastitis. Two of them were cured. The adeno-carcinomata are the most favorable group for operative interference. The colloid carcinoma belongs to this group. Here also the cancers originating in cystic adenomata and in



COMPLETED ABLATION



RESULTANT SUTURE LINE

fibroadenomata, in chronic cystic mastitis and the duct cancer. The origin in tumors clinically benign again points to the desirability of the early exploration of such tumors and to the recognition of their true nature at the time of operation. Warren cites a case in which cancer was found growing in a small fibroma, the size of a horse chestnut, which had existed for over twenty years and a case of Brewer's deserves report in full. "A negress 16 years old was admitted to the Roosevelt Hospital in January, 1907, suffering from a small, hard nodule in the upper and outer quadrant of the right breast. She stated that as long as she could remember there had been a small round ball under the skin near the areola. This was not painful, and had given her no trouble until six months ago, when it began to grow larger and apparently gave rise to painful sensations in the breast. On examination a hard somewhat elastic, oval nodule was felt, which was distinctly circumscribed and freely movable. It had no attachment to the skin nor to the pectoral muscles. The nipple was not retracted, and no axillary lymph nodes could be felt. The growth was regarded as a fibroadenoma which was possibly cystic. The tumor, together with a small amount of breast tissue was removed through a straight incision, radiating upward and outward from the nipple. On microscopic examination the growth was found to be *intra-canalicular, adenopapilloma* which had undergone distinct carcinomatous degeneration. As soon as the pathological report was received, the patient was again etherized and a complete Halsted operation was done. Her recovery was uneventful."

The transition from *chronic cystic mastitis* to carcinoma was found in five out of 100 cases in Warren's series, four of which are cured.

The duct cancer originates in a duct papilloma. In its earliest stage it will be found infiltrating the base of a papillomatous or villous growth which projects from the wall of a cyst that is formed by the dilation of a duct. A bloody or serosanguineous discharge may appear at the nipple at times. The tumor may be beneath the nipple which is then flattened but not retracted or it may be at a distance from the central zone. The same clinical findings may appear in a duct papilloma without malignant change. The duct cancers are not very malignant in their early stages, but later may take on a scirrhus or medullary change with a corresponding increase in virulence and activity.

Diagnosis.—It is true that cancer of the breast is a disease that can hardly fail of a diagnosis in the end. Given only time and it will need neither the microscope nor the physician to declare that a malignant disease is present and that the patient must die. In too many cases the diagnosis will be simple when the patient is first seen. Why a woman will harbor in her breast a lump of which she is in terror is a mystery, yet so it is. Often, indeed, the terror is what attracts the attention of her friends who extort from her a confession of the cause and bring her to the doctor for advice.

In a series of cases recently reported by Oliver, with, by the way, over 30 per cent. of cures, the average time the tumor had been known to the patient was eleven months, this excluding two exceptional cases in which a mass had been present ten and twenty years.

The patient then comes for diagnosis because she is anxious about a lump in her breast, and it may be that her anxiety is not well grounded. It may be that there is no lump in her breast at all. These pseudo-tumor patients, by the way, are more apt to be young. The mass may be altogether imaginary, or it may be a prominent and angular



MEDULLARY CARCINOMA OF THE RIGHT BREAST.
THE NIPPLE IS DEPRESSED



ABSCESS OF THE LEFT BREAST.
THE NIPPLE IS DEPRESSED

rib. I have seen this several times, or it may be, and this especially, in young unmarried, anæmic women, an undue engorgement of the breast at the menstrual period. At such times the ducts may be felt thickened, engorged, tender, radiating from the nipple. The condition disappears when menstruation is over.

But if there is a tumor present the woman's anxiety is justified and the tumor should be approached with the idea that its nature is to be definitely made out. It simplifies matters a little, I think, if one remembers that these cases fall into well-defined classes on a basis as to which there can be no very great mistake, their age.

In Warren's 758 cases of all varieties of breast tumor, 76 per cent. of the cases, over 30 were cancer. In cases under that age, less than 10 per cent. Even in the decade from 30 to 40, 60 per cent. of the cases were carcinoma. This does not refer to neoplasms but to lumps in the breast.

Apart from these broad lines the preceding is of comparatively slight importance. There may or may not be a family history of malignant disease. There may be very likely some story of a blow. The matter of child bearing, of lactation. The scar of an abscess, previous attacks of exacerbation of a chronic mastitis, all deserving of note, but not of prolonged attention. The examination of the breast is the thing. The physician will do well to lay the history upon the table and look at the breast. And for this the patient is to be suitably prepared. Merely opening the dress and lifting the breast above the corset will not do. All the clothing above the waist should be removed and both breasts carefully and thoroughly inspected, palpated and then inspected during palpation. Inspection should be made from the front and from each side with the eyes on a level with the breast and in a good light. The diagnosis may sometimes be made in this way alone. One looks to see if there is any manifest difference in the size of the breasts. Any irregularity of outline. Skin dimpling or flattening of contour. The situation is to be noted. Cancer is more common in the upper quadrant, under the nipple, and on the outer side. The benign neoplasms on the other hand occur more often in the inner quadrant of the breast. Is the nipple retracted more on one side than on the other? Is it flattened disproportionately on one breast? Is there any shortening of one radius of the breast or lengthening as in benign growths?

It is a property of scirrhus carcinoma to cause contraction of the suspensory ligament of the breast and so to shorten the radial axis in which it lies.

Easier to make out than this measurement of a radius, however, is a measurement of the distance from the clavicle to the nipple, and a comparison with a corresponding measurement on the opposite side.

In scirrhus tumors it will be found that the nipple on the affected side is elevated from one-half to one inch or even more, while in the larger, more rapidly growing adeno-carcinoma and medullary carcinoma as well as in the benign growths the weight of the mass carries the breast and the nipple down.

I do not wish to emphasize this sign unduly nor to insist upon its importance unless further observation upon normal variations and its occurrence in disease should corroborate its value.

I believe, however, that it is worthy of note and consideration.

In the later cases, when the skin is itself infiltrated, difference of color—dusky, livid or both in zones may be made out. Or the rough orange skin or pig-skin pitting will make its appearance. Or chronic



WELL ADVANCED SCIRRHUS OF THE BREAST. SHOWING
THE ELEVATION OF THE NIPPLE AND INVOLVEMENT
OF THE SKIN OF THE AXILLA



ACUTELY INFLAMED CHRONIC MASTITIS. THE
NIPPLE OF THE AFFECTED SIDE IS DEPRESSED

eczema with discharge from the nipples and thickening beneath it of the rare Paget's disease. All these are characteristic in their appearance. But it is in the earlier stages before the skin itself is in any way involved, but when the contraction of the growth draws upon the suspensory ligaments of fibrous tissue that pass from the breast to the skin that the localized skin retraction is to be sought. This, the most important sign of early scirrhus is to be looked for, felt for, and looked for again while the breast is made to move to and fro under the skin. The nipple is retracted in the majority of cases of scirrhus as they come under observation, but it cannot be considered an early sign.

In medullary carcinoma neither of these signs is to be expected nor in adeno-carcinoma.

Palpation is best done in most breasts with the palm of the hand and the palmar surfaces of the fingers pressing the breast against the chest, the examiner standing behind the patient. In fat breasts, particularly if they are pendulous also, this is not so good a method as the palpation of the breast between the flat hands. One will note the size of the mass, and if there be more than one, its consistency, its shape and outline whether discrete or not and the presence of nodularity and most of all its mobility on the deep part, under the skin and in the gland itself.

After palpation alone the breast should be again inspected with palpation to note the effect upon the skin of moving the breast and the tumor under it. Sometimes the attachment of a growth to the skin will be most easily recognized by encircling the base away from the chest (Finney).

The palpation should be gentle. The rough manipulation of cancers of the breast by osteopaths has shown clearly enough that the disease may be readily disseminated in this way, and it is illogical to pursue elaborate care to avoid pressure on a breast at operation after little short massage before. In a recent article Halsted says: "It well repays the experienced surgeon to spend perhaps an hour in examination of certain breasts," and that "the firm circumscribed pressure exercised in the effort to determine the elasticity of a tumor occasionally ruptures, I believe, the capsule of a fat lobule." This cannot be good for a malignant breast. And in this connection it seems, too, that the patient ought to be cautioned not to palpate her own breast to see if the tumor is growing as it is so natural that she should do. The palpation of the axilla will be routine, of course, but too much stress has been laid upon it as a part of the diagnosis examination for diseases of the breast. It is rather a part of the supraclavicular glands and of the liver and pleura as well. The presence of enlarged axillary lymph nodes is important if malignant disease can be recognized as indicating the stage of the disease. Their presence, however, does not disclose a tumor malignant nor does their absence in any way assure the reverse.

The most frequent form of cancer of the breast is scirrhus, and the commoner type of scirrhus is the infiltrating tumor. The earliest sign that this tumor gives is the dimpling of the skin which is to be sought for by such an examination as has been outlined above.

Let us suppose that a tumor of the breast does not give the clinical signs of infiltrating scirrhus or of medullary cancer with its rapid growth, how may we exclude malignant disease. Perhaps it will be



SCIRRHUS CANCER OF THE BREAST. SHOWING
ELEVATION AND RETRACTION OF THE NIPPLE



UNRESTRICTED USE OF THE ARM THREE WEEKS
AFTER OPERATION

most convenient to take up briefly some of the conditions that one may meet.

The adenofibromata occurring mostly in young women, painless as a rule, encapsulated, freely movable on skin deep parts and breast may usually be readily recognized. But we have seen in Brewer's and Warren's cases how even here cancer may lurk. Such cases are, however, exceedingly rare. So also, of the cystic adenoma itself, a rarer type of tumor. The malignant element in such tumors should be recognized at the time of operation, and it seems sufficiently clear that such tumors should be removed.

Chronic cystic mastitis which has many names, but is one condition nevertheless, appears to be a common way for malignancy to begin. Clinically it appears in two forms. One shows a large cyst or groups of cysts giving a more or less elastic, and it may be lobulated rather than nodular, tumor rather centrally located, the rest of the breast and the other gland as a rule showing the characteristic changes of the disease. This is the type less likely to undergo malignant change, but even such glands are better out than in and suspicious areas may be examined at the time of operation.



THE SCAR OF A HALSTEAD OPERATION
FREQUENT SITE OF RECURRENCE

The second type has multiple cysts into the cavities of which grow papillomatous masses springing from the cyst wall, the adenocystic form so-called. These breasts are apt to present themselves with a part of the organ acutely inflamed, tender, it may be somewhat brawny. Under suitable treatment the acute exacerbation subsides and one then finds that part of the breast chronically thickened and matted with a leathery shot-like feel; the skin freely movable but it may be the breast less so about the periphery than normal. The diameter of the quadrant is increased. Such a mass may completely resolve, but if the thickening persists the breast should be removed, for this is the type of disease more apt to form malignant deposits. A microscopic examination at the time of removal will find the cases that need more radical surgery.

Chronic Abscess.—This makes a deep induration under the nipple which is retracted. It may be attached to the deeper parts. The history is apt to be a long one with or without a recognized suppuration in the breast. There should be the history of lactation. It may be as hard as a cancer. The axillary glands are frequently involved. It may be quite

impossible to distinguish it from cancer on clinical examination. The area of induration should be excised in any case and the use of the aspirating needle is contraindicated, except at operation, when an incision is probably better.

For the removal of a suspected mass in the breast the incision of Thomas, encircling the breast in the fold below it, the elevation of the gland, and the removal of the mass from its lower surface is suitable. The tissue may then be immediately examined by frozen section under the microscope and if found innocent the breast may be replaced and the incision sutured with very little resulting deformity. If a cancer be found a radical removal of the breast, muscles, axillary contents and fascia should be done.

The essentials of this operation are now thoroughly established, but I wish to submit to you an incision that appears to me to present some advantages over those generally in use. The shape of the incision will be seen on the slides which I shall presently show. The advantages which I am disposed to claim for it are that it removes the skin and superficial fascia of the axilla where local recurrences occasionally occur and that its closure does not hamper the use of the arm.

The conclusion of the matter seems to be this. For the diagnosis of the greater number of cancers of the breast we must rely upon a careful clinical examination, and the elicitation of well-known signs. But there are a considerable number of tumors of the breast in which a diagnosis cannot be made without delay, which is dangerous to the patient. All such suspect masses in women over thirty should be cut down upon, recognized by gross or microscopical examination made at the time and treated as the conditions indicate. It seems increasingly evident that delay is the greatest danger to a woman with a tumor of the breast. It is to be hoped that as women seek advice earlier the number of cases in which a clinical diagnosis of malignancy is possible will diminish and that more cases may be admitted to the group in which the diagnosis is made at the time of operation, 96 per cent. of whom survive.

BRAIN INJURIES.

By John H. Long, A.B., M.D.,

of Brooklyn, N. Y.

THE clinical material, which forms the basis of this paper, consists of all the fractures of the skull, 32 base and 44 vault, which were treated in The Brooklyn Hospital from January 1, 1908, to December 31, 1911, on the services of Drs. Wood, Westbrook and Jennings, to whom I am indebted for the privilege of studying their cases. I am especially indebted to Dr. Jennings for my personal cases which were treated on his service.

The experiments, some of which are briefly referred to, were done in the Physiological Laboratories of the Long Island College Hospital. I am indebted to Professor Cardwell for the use of his laboratories and the assistance of himself and his associates.

I have drawn upon the experimental results of Naunym, von Bergmann, Kocher, Cushing and Cannon, and quote them freely.

Etiology.—The immediate effect of traumatism is some degree of concussion, varying from "seeing stars" to instant death. A well

localized force, causing fracture and depression over the area of impact, causes comparatively mild concussion, for example one of my cases, J. M., was struck above and behind the left ear by a falling iron girder which weighed several tons. A portion of the skull two inches by three-quarter inch was depressed and driven into the brain at least one and one-half inches. He was conscious and rational within a few minutes. A diffused force unaccompanied by local depressed fracture, especially when applied to the occiput, causes more severe concussion and laceration of brain tissue, as demonstrated by many autopsies which show no external signs of injury, but extensive laceration of the brain and subdural hemorrhage, with or without a fissured fracture of the base.

The cause of the concussion is trauma, inflicted on the bony case. The vibrations or sudden changes in shape of the skull are transmitted throughout the semi-fluid contents of the cranial cavity, that is, the soft, blood-filled brain and cerebro-spinal fluid. The trauma may be a single severe blow or a series of light blows (von Bergmann) each of which produces a momentary stimulation, followed by depression. The periods of stimulation decrease until they disappear while the periods of depression increase. The order of sensitiveness to circulatory disturbance is: 1. Cortex; 2. Corona radiata; 3. Gray matter of spinal cord; 4. Pons; 5. Medulla; so that a circulatory disturbance which is sufficient to cause coma and muscular paralysis *may* cause stimulation of the respiratory and vassomotor centers.

Pathology.—The causes of death from brain injuries are:

1. Destruction of vital centers directly.
 2. Depression of the vital centers from shock.
 3. Paralysis of vital centers by compression caused by:
 - a. Extra dural hemorrhage.
 - b. Subdural hemorrhage.
 - c. Edema of the brain.
 4. Sepsis.
1. Destruction of vital centers directly. These are immediately fatal and do not figure in hospital statistics.
 2. Depression of vital centers from shock. These live only a few hours and are in a critical condition from the time of the injury.
 3. Paralysis of the vital centers by compression. This cause either alone or superimposed upon some degree of depression of vital centers by shock is responsible for a majority of the deaths in hospitals, as indicated by two of the three autopsies to be mentioned later.

Compression.—Local compression, in comparison with general compression, has little influence on the immediate mortality of brain injuries. General compression may be due to cerebral edema, a large localized collection of blood, as in extra dural hemorrhage, or a free subdural hemorrhage from laceration of the brain and pial vessels or venous sinuses.

The brain tissue is as incompressible as water. Diminution in the volume of the brain is due to diminution in the amount of blood in the arteries, capillaries or veins. The high intracranial pressure which results immediately from trauma to the skull (Cannon) causes a transitory oligemia, this in turn is followed by edema, which is caused by the temporary interference with nutrition, and is the result of *osmotic*

pressure: this being entirely independent of blood pressure may be several times as high.

The edematous brain tissue causes increased intracranial pressure, which first displaces the cerebrospinal fluid into the spinal canal, then the medulla and pons downward, thus plugging the foramen magnum and causing pressure of its margin on the medulla (Leonard Hill, von Bergmann, confirmed by the author in experiments on cats and dogs). When this degree of pressure is reached the superior longitudinal sinus is collapsed and absorption by this channel is stopped (Cushing). Normally this removes fluid from the subdural space very rapidly. Further increase in cerebral pressure is not transmitted to the spinal canal. Concussion may cause sufficient edema to produce fatal compression without laceration or hemorrhage. Cushing conducted a series of experiments on dogs to determine whether the symptoms of compression were due to cerebral venous congestion or cerebral anemia. He demonstrated that while stasis occurred in the veins, the symptoms of compression did not appear until the pressure was increased sufficiently to cause capillary anemia in the medulla. Then the major symptoms of compression were present until the rising blood pressure had restored the capillary circulation in the medulla, which it did with each increase of intracranial pressure until the blood pressure was two or more times the normal. When beyond the limit of reaction the pulse became rapid and feeble and respirations ceased permanently. No safe limit for the blood pressure could be determined. In my experiments on dogs all the cases in which death was caused by slowly increasing cerebral pressure had enormously dilated hearts post-mortem. Those in which death was caused by rapidly increased high pressure did not. This suggests that a major factor in the cause of death from brain injuries may be the condition of the myocardium which accounts for numerous deaths from intracranial hemorrhage without high blood pressure. The blood pressure will reach a higher level in response to slowly increasing cerebral pressure than in response to a rapidly increased pressure, before death occurs. The deduction of clinical value to be drawn from this is that the slow pulse and rising blood pressure are nature's method of preserving life, that the blood pressure is an indication of the cerebral pressure and also of the ability of the vascular system to respond to the stimulation of anemia of the medulla. That when the intracranial pressure is causing a steadily rising blood pressure, the margin between recovery and death is very narrow and we know no method of determining which will occur.

Compression due to extra dural hemorrhage has been recognized for many years as amenable to treatment. A classical description of the symptoms is:—a short period of unconsciousness, due to concussion, followed by a lucid interval of a few minutes to many hours, this is followed by stupor and increasing coma and twitchings of the muscles of the arm, leg and face on the side opposite the hemorrhage, which are succeeded by paralysis of the same, because the hemorrhage is from one of the branches of the middle meningeal artery which overlies the motor area. An extra dural hemorrhage does not necessarily mean a fracture of the skull or that the hemorrhage is on the same side as the external injury. A short lucid interval less than two hours indicates a rapid hemorrhage which will prove fatal, unless the pressure is immediately relieved. A long lucid interval, twelve hours or more, followed by the signs of local compression, indicates

pressure from edema or recurrence of hemorrhage. The classical history is frequently not present because the unconsciousness of concussion is prolonged into the unconsciousness of compression so that the localizing signs are obscured and the lucid interval is not present. The shock of the trauma depresses the vasomotor center so that there is little or no rise of blood pressure and slowing of pulse. That a considerable proportion of the deaths from base fractures may be due to middle meningeal hemorrhage, either intra or extra dural, may be inferred from the fact that two of the three base fractures, in the series which were autopsied, had linear fractures crossing branches of the middle meningeal arteries. One of my vault fractures which had an intact scalp and dura with a fracture extending from just behind one mastoid process over the vertex to a corresponding point on the opposite side, gave the classical symptoms, excepting localized paralysis. The compressing hemorrhage was mainly from the posterior branch of the temporal artery.

Subdural Hemorrhage.—The causes are laceration of brain tissue, most frequently the anterior portion of the temporo-sphenoidal lobes, by impact against the sharp posterior margin of the lesser wing of the sphenoid, giving a copious free hemorrhage; rupture of the pial and cortical vessels, usually causing a small hemorrhage which forms a thin clot over the surface of the cerebrum; rupture of one of the branches of the middle meningeal artery with rupture of the overlying dura (I have seen one such case: there was a large subdural and small extra dural clot), rupture of some of the intracranial venous sinuses. Usually the trauma which causes an extensive subdural hemorrhage causes immediate and prolonged unconsciousness, with or without rising blood pressure and falling pulse, depending upon the amount of hemorrhage and severity of the shock. On the other hand occasionally the concussion is very slight, especially in people who have arteriosclerosis, and the symptoms are typical of extra dural hemorrhage without the localizing signs.

My experiments with paraffin, with melting point slightly lower than that of the body temperature, and, therefore, roughly imitating clotting blood, indicate the distribution of the clot which may be expected from hemorrhage from the anterior, superior and inferior surfaces of the cerebrum. When the paraffin was injected slightly to one side of the vertex, it was distributed in a thick layer on that side and a thin layer under the inferior surface and upward on the external surface of the opposite side nearly to the vertex. None passed into the posterior fossa. When injected in the anterior fossa over the frontal lobe it was all found at the point of injection, that half of the cerebrum having been crowded backward. When injected in the temporal fossa, as near the base as possible, it was all on the inferior surface of the cerebrum, pons and medulla, having raised the brain, and freely entered the spinal canal. I have seen the first two distributions of clot post-mortem, but not the third. I conclude that hemorrhage at the base drains freely into the spinal canal ventral to the pons and medulla and that the weight and pressure of the brain favors this drainage so that thick clots do not form in this location. The brain displacements in the first two instances explain why we may have a very high intracranial pressure and at the same time a normal or low spinal pressure, as indicated by a manometer attached to a trochar in the spinal canal. I have seen one such case.

Edema.—In compound fractures of the vault, with extensive loss

of bone and dura, and laceration of the brain, several of which I have seen in the last three years, there occurred sometime within twenty-four hours after operation, which was done as soon as possible after admission, an extensive protrusion of edematous brain. This was prominent for about one week, then rapidly subsided and remained retracted within the cranial cavity. Another patient had a large bone flap raised and dura reflected back for relief of epilepsy: there was slight trauma to the cortex. Three days later the replaced bone flap was raised more than its own thickness above the surrounding bone by the underlying edematous brain and there was paralysis of hand, face and motor speech areas, which disappeared when the edema subsided. This was not edema due to lack of support because the bone flap was replaced and a firm dressing applied over it. Had not the bone flap allowed expansion this edematous area would have caused some general compression since its power to exert pressure, if the conclusion of W. B. Cannon in the *American Journal of Physiology*, Vol. 6, previously quoted, be correct. Edema is not a factor causing compression during the first six hours, but I believe that it is important after twelve hours. I believe that von Bergmann's oft quoted statement that "if not infected, base fractures that live forty-eight hours, recover," is partly based on the fact that edema has reached its height in that time and is subsiding, giving gradual relief to pressure symptoms.

Sepsis.—The fourth cause of death in brain injuries is comparatively uncommon at present. I had one case in which there was a compound depressed fracture behind the left ear: this was untreated for several weeks; when admitted to the hospital, he had septic meningitis which was secondary to a brain abscess which ruptured into the left lateral ventricle.

Clinical Croups.—Upon studying the twenty-nine cases of base fractures in which the histories were fairly complete, it seemed to me that if first seen within one hour of the injury they could be grouped as follows:

1. Mild concussion, blood pressure and pulse practically normal. These patients were never in serious condition. If cerebral pressure increased after the lucid interval their pulse and blood pressure would show it. After the fourth day several of these patients had pulse below sixty with normal mental condition. Reasonable management of these cases is rest in bed with hourly records of pulse and blood pressure. Approaching coma with rising blood pressure is a distinct indication for *immediate* decompression. There were five cases all of which recovered without showing the indications for decompression.

2. Delirium present, which may or may not mean brain laceration, pulse and blood pressure within normal limits. The delirium indicates that the traumatism has been insufficient to depress the cortex, therefore the vital centers are capable of responding, to some extent, to increased cerebral pressure and the onset of the first signs of this—*i. e.*, rising blood pressure and delirium changing to stupor are positive indications for decompression. There were six cases, four recovered, one died in six hours, one in seventy-two hours.

3. Comatose, blood pressure and pulse within normal limits, therefore sufficient traumatism to depress the cortex, but not sufficient to depress the vital centers to such a degree that they do not respond somewhat to rising intracranial pressure. The beginning of the response should be considered a very positive indication for prompt

decompression. There were seven cases, four recovered, three died between the fourth and seventh hours.

4. Comatose, blood pressure high, pulse slow, therefore a high intracranial pressure already developed to which the vital centers are responding, but we have no means of knowing how much further they are capable of raising the blood pressure, and at this time—*i. e.*, one hour after injury, it points conclusively to a rapidly increasing pressure which demands instant decompression. Two cases, one died two and one-half hours, one three one-half hours after admission.

5. Comatose, blood pressure low, pulse rapid and feeble. Either the trauma has been sufficient to cause depression of the vital centers by the severity of the shock, or there has been a rapid hemorrhage, with sufficient compression to overcome the vital centers before the patient was observed. In the first instance the trauma which is severe enough to shock the medulla almost invariably causes extensive hemorrhage, and it is impossible to determine which causes death. In the second instance relief of pressure increases what little chance there is for recovery. There were nine cases, two recoveries, seven deaths between two and thirteen hours.

From observation of head cases in the wards and at autopsies since my internship, I have been impressed by the following facts:

That the classical slow pulse and high blood pressure are absent in a large proportion of cases which have an extensive intra-cranial hemorrhage.

That if the skull is only opened when these symptoms are evident many cases in which one of the fatal fractures could be relieved are neglected.

That when the slow pulse and high blood pressure are present they are indications of the reaction to high cerebral pressure, and there is no reliable sign which will indicate whether the vital centers will be overpowered within five minutes, or whether they will continue to react and keep the blood pressure above the cerebral, thus resulting in recovery.

That a patient in coma, following a head injury, is in a very critical condition and prognosis is uncertain.

That decompression, if done at all, is in the great majority of cases, done too late, that is, when the indications are very clear.

That in the cases which I have observed there have been none in which death was caused by the operation, but many in which prompt decompression would have preserved life.

That a few of the mild cases, groups 1 and 2, rapidly develop fatal symptoms, and that a few of the worst cases get well without operative aid, group 5.

That in the fatal base fractures death occurs within twelve hours. Thirteen of the fourteen fatal cases.

That in the vault fractures death seldom occurs within twelve hours. Of the twelve fatal cases, five died between twelve and forty-eight hours and six lived more than forty-eight hours.

Treatment.—In order to reduce the mortality, the one cause of death which we can remove, *i. e.*, compression, should be attacked promptly. In order to render this prompt relief to those to whom it is an absolute necessity, some patients, to whom it is not a necessity and perhaps not a benefit, must be operated. (All of the patients, both vault and base fractures, operated and non-operated, who answered my letter of inquiry about their health since the injury, reported freedom from severe headaches, epilepsy, etc.) My present

opinion is that group 1 should be treated with head elevated position, ice-cap, etc.

Group 2 should receive the same treatment, with preparations for immediate operation which should be done if blood pressure begins to rise or stupor follows delirium.

Group 3 would have a wider margin of safety if decompressed before the very definite indications were present—*i. e.*, immediately.

Group 4, without doubt, should be decompressed or drained without any delay, in the receiving ward, if necessary, to prevent delay.

Group 5; for good operative statistics group 5 should be let alone. A trephine opening and insertion of rubber tissue drain in both temporal regions permits drainage and lessens the compression in those cases in which hemorrhage is the fatal factor, and hastens the death of those in which shock is the fatal cause, although I believe that this can be done with little additional shock and should be done, as the possible benefit is greater than the possible damage; without operative treatment seven of the nine cases were fatal.

The Operation.—The most efficient and easily performed operation for decompression is Cushing's bi-lateral temporal decompression which means rongueing away the bone so that openings the size of a silver dollar or larger are made, incision of dura and the introduction of one or more drains under the base, without which drainage is inefficient as the opening is closed by the bulging brain. As pointed out by Cushing this places the drain at the most common location of the origin of the hemorrhage—*i. e.*, anterior portion of temporo-sphenoidal lobes, also it exposes middle meningeal hemorrhage, if present, as it occasionally is. A trephine opening, with incision of dura and insertion of drain, will drain away hemorrhage, but does not decompress. There is little shock in this procedure and is indicated in groups 4 and 5, instead of the decompression operation for immediate drainage.

I did one sub-occipital drainage on a case in group 2 when coma was replacing delirium and the pulse was 60 and blood pressure 150 mm. within four hours of injury. The result was all that could be desired, drainage was good and compression relieved, but I now believe that the bi-lateral temporal operation would have drained more efficiently and I know that it is much more easily done.

I have purposely confined this study to cases which were treated prior to 1912 in order to get the natural clinical course without early operation. I hope at some future time to report the result of further experimental work and the result of cases subjected to early operation. The mortality of the studied cases was about the usual mortality—*i. e.*, 32 base fractures, 14 deaths; 44 vault fractures, 12 deaths.

A CONSIDERATION OF OUR GENERAL ANÆSTHETIC AGENTS ETHER AND NITROUS-OXIDE-OXYGEN.*

By William C. Woolsey, M.D.,

of Brooklyn, N. Y.

THE subject matter of this reading is limited to ether and nitrous-oxide-oxygen, because it now seems fair to assume that other agents carry such a preponderance of evidence against them that their use is indeed limited, if permissible, under any circumstances.

The frequently reported and constantly observed lipoid degeneration of liver and kidneys in the so-called delayed toxæmia of chloro-

* Read before the Medical Society of Kings County, December 19, 1913.

form, preclude the selection of this agent even where recognized renal disease is present; for contrary to the long respected teaching, chloroform *does* damage kidney tissue almost to the same degree that it affects hepatic tissue.

The most complete studies in proof of this fact are those of Cragin in *Sloan Hospital Reports*, 1913, and *Journal of the American Medical Association*, Vol. LVI, and a series of investigations by Whipple of Johns Hopkins in the *J. H. Bulletin* through the years 1912-13.

The general cytolytic effect of chloroform, and especially its parenchymatous necrosis of the liver and kidney has special surgical significance when into the previous history of the patient can be read, diabetes, sepsis, starvation, hemorrhage, infantile paralysis, parturient toxæmia, eclampsia or any hepatic or renal deficiency.

With the elimination of chloroform as an anæsthetic or means of controlling the convulsions of eclampsia, Cragin has reduced his mortality in these cases from 30 to 12 per cent. With the discontinuance of chloroform as an anæsthetic in all obstetrical work in the least suspicious of the toxæmias of pregnancy out of 6,863 deliveries there were 50 cases that developed convulsions, as opposed to 50 in 5,164 cases where chloroform was used.

The etiologic influence of maternally absorbed chloroform in the production of infantile post partum jaundice is sufficiently established by Whipple, of Baltimore, to make further investigation interesting and to give further warning against chloroform.

Under the broad term "surgical shock" have been sheltered a host of post operative cardio-vascular phenomena heretofore considered more the result of the operative procedure *per se* than analysis justifies.

Crile's conception of shock has moved in a period of ten years from the wearing of a whole rubber suit by the patient to support the periferal blood pressure to the figurative wearing of rubber gloves by the surgeon and all his attendants.

Henderson pursuing the respiratory studies of Haldane and Priestly lays all shock at the door of carbon-dioxide waste and from the physiological nucleus of truth, that CO₂ flux in the body economy is *one* factor regulating respiratory function, he mentally leaps to the assumption that *all* anæsthetic deaths are due to acapnia, caused by hyperpnœa (exaggerated respiratory effect) and visceral exposure.

The condition recognized as operative surgical shock should be etiologically divided into: (a) that caused by the anæsthetic, toxæmia direct and indirect; (b) that caused by hemorrhage or similarly serious coincident factors of operative invasion, such as vagus section, pneumothorax, etc; (c) that caused by the actual afferent nerve trauma of surgical procedure.

Few, indeed, are the cases that do not take an anæsthetic well. It is a matter of its not being given well, and contrary to the usual operator's remark, the converse is not less true.

It does not seem to the writer to be overstating the matter to say, that leaving out of consideration the element of hemorrhage or similar invasive incident of operative procedure, 90 per cent. of operative shock is anæsthetic shock. In the case of ether, the drug itself, administered in any degree approaching what could be called therapeutic dosage, has little toxic effect and has shown itself almost fool-proof; but, when allowed in any manner or degree to obstruct the proper

acquisition of oxygen and to thus institute forced, labored breathing with prolonged anoxæmia (oxygen deprivation) the damage to the circulating efficiency in particular, and the body as a whole, in general, cannot be estimated.

The nature of the injury thus caused shows itself: (a) in death on the table with respiratory collapse, total obstruction to breathing, and deep cyanosis, in murderously handled cases; (b) with early refusal of the heart to functionate under the adverse conditions in cases where the cardiac factor of safety is at a minimum; (c) with death some hours or days post-operative in cases where the cytolytic damage to excretory organs is too great for the individual's capacity for repair; (d) with varying degrees of delayed surgical convalescence often followed by forms of cardiac decompensation or neurogenic incapacity lasting for years.

Many of the factors that enter into the erroneous exhibition of ether, and lead to its indirect damage of the organism are matters of ancient history, but, if one such factor were to be singled out as being more important than all others of method or apparatus, it would be the failure to provide under all circumstances free, unobstructed upper air passages. With the elimination of this error would go 90 per cent. of the cardio-vascular and pulmonary disasters, called operative shock. Most of us have so long tolerated a certain degree of cyanosis during ether anæsthesia that it has become an expected sequel and minor grades considered as almost necessary. The drug itself does not cause anoxemia directly. It is due to respiratory obstruction in most cases and should not be tolerated.

Practically, the obstruction to breathing above referred to, occurs at four places: (a) at the base of the tongue and deep pharynx from relaxation of muscle support; (b) at the glottic incisure when the epiglottis becomes sucked down over the glottis, like the cork in a bottle, this being the result of negative pressure in the pulmonary cavity caused by powerful accessory muscular efforts to get air past obstructions higher up; (c) at the alæ of the nose or lips of elderly people when removal of false teeth and flabbiness of tissue allows collapse on inspiration; (d) in the trachea and bronchi where accumulation of mucous or vomitus has resulted from other errors of technic, such as the over-dosage of cold, hygroscopic, concentrated vapor, poured on a mask during a too rapid induction.

All of these conditions can be prevented or remedied when a proper understanding of their dire significance and manner of occurrence is acquired.

When the anæsthetic agent is being delivered at the face as in drop technic, prompt insertion of the breathing tubes of Connell, Coburn, etc., insure free upper respiratory air ways and the mouth gag, tongue suture and jaw-holding are relegated to the museum where they belong. Where the principle of insufflation is available these difficulties are impossible of occurrence, for the anæsthetic vapor is deposited through nasal or pharyngeal tubes well below all obstructive phenomena of mouth, tongue and pharynx. If cyanosis persists despite a positive freedom from obstruction of the upper air passages and the absence of mucous from the larger bronchi, as infrequently happens, then more serious causes must be looked for in too great dosage, or some cardio-vascular deficiency.

DOSAGE.

In an altogether different manner from other drug therapeutics, the dosage of anæsthetic agents heretofore has been entirely regulated

for each individual subject, through moment to moment observation of his or her reaction to the anæsthetic, by the more or less skillful anæsthetist, the amount given being in inverse proportion to the skill of the administrator.

The remarkably painstaking work of Connell, of New York, has determined that in order to produce surgical anæsthesia the human subject requires a vapor of ether in air of from 15 to 25 per cent. strength, delivered directly to the pulmonary absorptive barrier where it enters the blood, in accordance with the recognized laws of solution of gases in liquids.

The ether vapor must reach a certain definite tension in the blood in order to subdue the receptivity of the neurocyte to afferent nerve impulses. The higher the degree of this blood tension the more complete the elimination of nerve function, said elimination of function occurring in sequence from the highest to the lowest centers. Somewhere in this tension range lies a point just sufficient to eliminate consciousness and another point farther on absolutely prohibitive of any degree of noci association. Between these two points lie the varying degrees of surgical anæsthesia, the most superficial on the one hand being sufficient for lesser grades of surgical trauma and the more complete narcosis, necessary where the surgical procedure involves greater degrees of trauma as in abdominal manipulation of viscera.

As a result of this work and directed toward the accomplishment of automatic delivery of accurately measured dosage, the anæsthesia machine (Anæsthetometer) of Connell has been perfected.

Contrary, to what may appear at first sight to be the substitution of a machine lacking intelligence for the anæsthetist, this apparatus places under the control of an assistant surgeon's guiding hand, dependable, accurate dosage.

Within wide limits every human requires practically the same ether tension to produce the same grade of brain protection from the same nature of operative traumatism and the machine once set to deliver a proper dose, continues automatically to carry out that function throughout an anæsthesia, only requiring change to suit the variable steps of the operation.

In the large operating clinics where the economic question of suffering from frequently changing inexperienced anæsthetists, or paying a comparatively expensive trained one, or teaching a much less costly nurse, arises, such automatic safety as the Anæsthetometer affords, controlled by any surgical assistant, is almost a solution of the problem.

Just at this point it may be in order to make clear the frequently debated question as to warming anæsthetic vapors. That such vapors can be warmed, there is no question, but as to the necessity, advisability and practicability there arises considerable doubt. The more important point is to eliminate the element of refrigeration that accompanies every technic where liquid ether is furnished with its specific heat of vaporization and moisture of re-warming, directly from the patient's tidal air.

The ill effects in the ordinary case from such refrigeration may be inconsiderable and free from serious damage, but with children and in subjects already debilitated, there arises the question of utmost conservation. The vapor delivery is so simple and has so many virtues that only such excuse as hospital economics can be given for persistence in a drop technic.

However, a skillfully handled technic with refrigeration is more satisfactory to the surgeon than an unskillfully conducted vapor procedure of any kind. The recognition of the necessity for perfect aeration of the lungs during ether narcosis and that failure in sufficient aeration is responsible for both difficult narcosis and fatal ones, has given rise to that form of vapor technic known as insufflation anæsthesia. Here, whether the procedure delivers the anæsthetic vapor into the deep pharynx or into the trachea, all the mechanical obstruction of pharyngeal spasm, recessive tongue, paralyzed epiglottis, mucus or blood in the throat is rendered inoperative and perfect æration is assured. The tracheal tube gives us endotracheal insufflation for intrathoracic work and the pharyngeal tubes give us assurance against obstruction in all narcosis and especially in adenoid and tonsil removal or other operations where blood is liable to fall into the deep pharynx and cause obstruction.

No recent development in the technic of anæsthesia offers so much actual comfort to the operator and true safety to the patient as this insufflation procedure. It is unnecessary to recall the frequent operative conditions where the intrusion of the anæsthetist into the operative field made almost ridiculous all efforts at asepsis or where the operator periodically had to retire while the anæsthetist reinduced narcosis, or where the presence of blood in the deep pharynx constantly jeopardized the respiratory efficiency as in resection of the superior and inferior maxillæ, or again where intrathoracic operations had to be carried out in a cabinet, and every adenoid and tonsil case was more or less strangled, the deepest kind of asphyxia being regularly tolerated. These are the fields where vapor delivery and insufflation exhibition make all the difference between comfortable, accurate operating and disturbed, risky uncertainty.

The above points in regard to ether have been selected as bearing upon the modern conception of ether as part of the surgical procedure. The second factor mentioned was that of hemorrhage and belongs to another field of consideration. The third was that part of operative shock taken part in by the afferent nerve trauma of the operative procedure. Without going into the details of Crile's Kinetic theory of shock, but considering the subject from the anæsthetic point of view.

Nitrous-oxide gas and oxygen as a general anæsthetic of choice, is utilized successfully in several surgical clinics of the country and in emulation many others have tried and failed. These failures will bear analysis because there is yet some doubt as to whether taken by and large, gas anæsthesia plus local analgesia has or has not advantage over other forms of operative technic.

In the Cleveland clinics has arisen what is known as the anoci-association principle in connection with which some complex questions of neurological significance have arisen. First, the contention that traumatic nervous impulses coincident to operative manipulation produce actual protoplasmic changes of serious consequence in the neurocyte has not yet been proven; second, that nitrous-oxide gas acts more certainly and completely than ether in protecting the central nervous tissues from operative afferent nerve trauma, is also a questionable matter; third, that ether offers no protection to the brain cells from the effect of trauma and that the lipoid solvent anæsthetics break the arc causing consciousness beyond the brain cells, somewhere in the afferent part, leaving the brain to suffer yet unable to respond,

seems absolutely at variance with the host of perfect recoveries from ether narcosis that all of us have seen. J. A. M. A., December 6, 1913, Crile.

The practical fact remains nevertheless that any narcosis which fails to protect the central nerve mechanisms from excessive afferent nerve trauma becomes a deleterious factor in surgical procedure. No objects go through operation as free from sequelæ as those whose confidence in their surgical caretakers eliminates every last element of fear and apprehension. The old stage of excitement in anæsthetic induction can and should be notable by its rarity.

It seems to the writer that one of the reasons for such general confidence in chloroform in the past has been its noticeable freedom from the marked dissociation of the central nervous mechanism which has always characterized the effects of ether when administered in the old do or die manner. The exaggerated breathing that became an expected sequel of ether induction and to the results of which Henderson attributes all the ills of ether narcosis seems again to be simply the result of that central nerve dissociation. In the alcoholic, resistant subject for anæsthesia the prolonged furious stage of excitement represents a more marked neurogenous dissociation, being mastered into submission only after great difficulty. Under these conditions always lie the dangers of severe operative trauma, for in some cases, with the central nervous mechanism in a state of functional chaos, only slight added assault such as that of incision or visceral exposure and sympathetic ganglion handling precipitates disaster.

Nitrous-oxide and oxygen becomes a proper agent for general surgical narcosis only when it is utilized in one of two ways.

(a) As an adjunct to complete local analgesia where only its most superficial effects are necessary while the local novocain cuts off wholly the field of operation, or (b) where it is skillfully supplemented by enough ether to bridge over the more severely traumatic stages of the operation.

In the extensive work reported by Prince, of Birmingham, Alabama, or Teter, of Cincinnati, the adoption of marked positive pressure of questionable degree plus highly developed individual skill, bridge over the unsuitable cases that these men see fit to force gas upon.

The anæsthetists of Crile's clinic are as hopelessly inefficient with gas when local analgesia is not complete as any others the country over, and I might say more so because they have had none of the training which comes with practice at manipulating nitrous-oxide without local analgesia.

After some experience the writer would venture the opinion that (a) nitrous-oxide and oxygen utilized for prolonged surgical procedure by any but the most skillful, or in any other manner known to us than as above suggested is much more dangerous than a properly handled ether narcosis; (b) that its virtues in the anoci association technique are not due to more perfect control of the central nervous receptive capacity than ether or chloroform, but to the possibility in the presence of complete local analgesia of utilizing the most superficial, least toxic effects of the gases, while the local novocain blocks the noxious afferent nerve impulses.

In the absence of well-conducted local analgesia or the skill and apparatus necessary for timely and properly added ether, the deeper degrees of nitrous-oxide narcosis are resorted to for the more com-

plete control of the resistant subject undergoing the severer grades of operative trauma. As a consequence the anæsthetist maintains that toxic depth of gas narcosis which has resulted in high mortality and uncomprehended morbidity. The proper depth of gas oxygen narcosis has an enormous and valuable field in all surgical work, but its margin of safety is narrow, compared with ether, and grave danger lies in its promiscuous use by any but the careful student of its therapeutic vagaries.

TECHNIC.

A few concluding words in regard to general technic may not be out of place.

Preliminary sedative medication in all subjects, except the very young, the aged or those where disease has already lowered cellular resistance, is all in all a distinct advantage. If through limited experience or economic necessity the drop technic is adopted, any open gauze covered mask well surrounded by towels, preferably moist, may be used, and some form of breathing tube inserted into the deep pharynx early on the appearance of obstruction to breathing.

If as the result of more experience and desire to make anæsthesia as safe and comfortable to the patient as possible, a gas initiation is adopted with an ether vapor delivery following, some form of vaporizing machine is utilized. The writer uses the Gwathmey three-bottle vaporizer. To these bottles is attached a celluloid gas mask and breathing bag, and by a second tube this bag is connected to the smallest gas tank.

The bag is filled with gas, the mask adjusted, the expiratory valve on the mask closed, the gas rebreathed for a few seconds by the patient, the weakest of ether vapors turned on from the bottles so that ever so gradually ether narcosis supersedes upon gas narcosis. The air of the ether vapor supplies just that amount of oxygen necessary to prevent all the cyanosis of older gas ether sequences, and with even moderate skill the transition from gas to ether narcosis becomes absolutely intangible to patient or onlooker. Rebreathing is maintained throughout.

At any time after ether narcosis is established, the gas mask is taken off and a vapor delivery mask is strapped to the face, or nasal tubes are introduced to the deep pharynx for insufflation. Several layers of towels over the face and mask facilitate minimum dosage and conserve CO_2 waste.

Every step in the procedure has a definite reason and apparent complexity of apparatus compared with the simple gauze mask technic is a hundred times justified in the objects attained.

The mechanical adaptation of insufflation dosage is a matter of special apparatus and belongs to another chapter.

The use of a mixture of ether and oil by rectum recently suggested by Gwathmey, is a combination narcosis dependent for much of its effect upon the sedative influence of chlorotone and morphin. Uncertainty of dosage of ether is the natural result of the varying absorptive powers of the rectal mucous membrane and instead of a constant minimum tension of ether in the blood, a maximum dosage varies with too little, a condition which scientific ether administration tries to get away from.

Special indications of surgical work, however, are admirably met.



EDITORIAL



THE WISCONSIN IDEA.

WITH characteristic impetuosity, the Wisconsin State Legislature passed a eugenic law demanding a certificate of health from each of the contracting parties before a marriage license may be issued. As a thrifty after-thought, the fee of the examining physician was limited to three dollars. Contemplation of this half-baked and hysterical attempt to breed only healthy little Wolverines makes one smile at the almost child-like faith that can see in legislative enactment a means of changing human nature, at the same time that it arouses one's pity for the ignorance of the principles that underlie the entire question. The immediate sequence of the passage of the bill was first, a storm of protest from physicians who were called upon to give twenty-five dollars' worth of service for three dollars, and second, indignant rebellion not only on the part of those contemplating marriage, but also those to whom the right of performing the marriage service has been given. The latter have claimed that civil marriage may be legally entered into without examination by simply registering the intention of the man and woman to live together and a fee of twenty-five cents covers such legal registration. The JOURNAL has previously pointed out in its editorial pages that such results would follow attempts to restrict marriage in such a way. The methods of the breeder of blooded stock cannot be applied to human beings for the simple reason that man is a free agent, conducts himself as he wills and cannot be confined to stock farms or housed in a stable. Marriage is the expression not of the intellect, but of a fundamental instinct and so the laws that govern the choosing of one's mate cannot be reduced to an algebraic equation. One of the maxims of Hafiz says:

"If It be pleasant to look on stalled in the packed serai,
Will not the young man try Its temper and pace ere he buy?
If She be pleasant to look on, what will the young man say:
'Lo, She is pleasant to look on; give Her to me to-day.'"

Any attempt to place marriage upon a rational basis must strike deeper than mere legislative enactment, which is stemming the torrent with bullrushes; not until a deep conviction has seized upon the human race; not until every man and every woman shall have felt the personal responsibility which rests upon them both to rear children unhampered by the sins of the fathers will the eugenic dream become a fact. That the public conscience is awakening is shown by this Wisconsin episode which shows also with amazing clearness how superficial is the realization of the problem. It will require generations of example and, we may safely add, of spiritual elevation to bring men and women to the point where their first instinctive thought is for others. In the present state of social order, the attempt at enforcement of such laws will result in greater harm than good, for the few

who have the moral courage to obey would do so without a law, while the many will only seek to evade it. In order that the much desired goal of physical purity and mental soundness may be realized, a wide reaching campaign of education must be fearlessly carried on. To this end the schools, the churches and other branches of our civil government must apply themselves so as to reach every class of citizen. The fullest knowledge of the laws of health must be spread abroad and a deeper sense of the power of religion to bring practical results into daily life must be insisted upon. Out of this there will in time grow a deep conviction of personal responsibility and from this in turn a true appreciation of civic duty. Then reason will supplant law and make it needless.

H. G. W.

PUBLICITY AGAIN.

AND now the publicity devil has laid hold of Dr. Howard A. Kelly and a news item announces that the Baltimore Medical Society proposes to investigate his published utterances about radium. Both he and Dr. Robert Abbe have lately had a great deal to say about the present status of radium therapy and have been liberally quoted in the daily press. The JOURNAL has in the past endeavored to make clear its stand on this subject and this seems a fitting occasion to reiterate what it has previously tried to emphasize.

There are some things on which the general public should be authoratively informed because of their vital interest. There are other matters which are merely the expression of individual opinion that are usually immature, the publication of which may do more harm than good, because they are still untried and so are of doubtful value; and there are public pronouncements made solely for self-exploitation, such as the accounts of remarkable operations, wonderful cures and new forms of treatment, that serve only to excite a credulous public and bring momentary notoriety to the individual from whom they emanate. Of these published utterances the second and third sorts are distinctly undesirable. Of the first it should be said that the form in which the publication appears should be so guarded as to exclude any semblance of self-exploitation. Confucius once said: "Avoid the appearance of evil; do not stoop to latch your shoes in a neighbor's melon patch." The only question that may be raised as to the wisdom of Dr. Kelly's published statements is whether they have been so phrased as to make it appear that he has endeavored to advertise himself at the expense of the rest of the profession. Making all proper allowances for inaccuracies which seem inevitable in reporting a professional statement for the lay press, it does not seem that there is anything in what Dr. Kelly has said that is open to criticism. It might have been wiser to have submitted his remarks before publication to some of his confreres, for by so doing all question of their being a personal view would have been avoided, but the motive of his statement is so evident that it seems unfair to criticize him for speaking in the first person on a subject which his experience so amply qualifies him to discuss.

H. G. W.



Society Transactions



TRANSACTIONS OF THE BROOKLYN GYNECOLOGICAL SOCIETY.

Regular Meeting, November 7, 1913.

The President, CARROLL CHASE, M.D., in the Chair.

Ectopic Gestation.

By Dr. Judd.

I wish to mention a case wherein I waited before operating until the patient improved in condition, and I have questioned my decision on account of the bad result. It was a case of ectopic pregnancy. Four weeks ago I saw the case on a Sunday evening at the Jewish Hospital. She had had sufficient hemorrhage to become unconscious, and her condition was not good. The blood pressure was 65 mm.; hemoglobin, 20; and it was impossible to get the pulse or second heart sound. I decided to wait for an improvement in condition before doing anything. She had improved the next morning considerably, the blood pressure had risen, but there was some retching and vomiting which lowered the pressure. She improved in the next twenty-four hours, and on Tuesday, forty hours after the first examination I opened the abdomen. There was a rupture of the left tube, two inches in extent; the abdomen was filled with an immense quantity of fluid blood, and there was only one clot, at the site of the rupture. At the time of the operation she had a blood pressure of 110. After hypodermoclysis she was sent down to the ward. At two o'clock she asked for water, but at five o'clock she became delirious, the temperature rose and she died at two A. M. the next morning with a temperature of 107 degrees. I bring this case up hoping to get an idea regarding the advisability of delaying operation in these cases.

Ureteral Calculus.

By Dr. Judd.

My second is a case of ureteral calculus. A. F., Russian. Married. Aged 39. Family history negative.

Previous history.—No diseases of childhood; had frequent attacks of tonsilitis. Had an ovarian cyst, right, and appendix removed at Beth Israel in 1904. Menstrual and marital: Periods regular since beginning at 17 years, 28 days, moderate flow. Leucorrhœal discharge occasionally. Married six and one-half years. Two children born spontaneously. One miscarriage, eight weeks, in 1912. Habits good, bowels regular, appetite good, micturition normal.

Present illness.—Gradual onset about two and one-half years ago. Symptoms of onset: Sharp, shooting pains in left lumbar region, cramp-like, radiating from lumbar region to pelvis and then down the leg. No vomiting, chill, or fever with attacks. Attacks stopped for one year, but became frequent during the past summer. Six attacks during the last three months. During attack before present one, patient vomited, but had no chill or fever. Pain increased in severity and lasted longer than ever before, requiring morphia. During attacks patient had dysuria, frequency every five minutes, but no hematuria. Last attack two weeks before admission.

Physical Examination.—Well-nourished, well-developed woman, not acutely ill. Head, neck and thorax negative. Abdomen: scar of previous operation. Tenderness over left ovarian region and along course of left ureter, increasing opposite uterus. Vaginal examination: Extreme tenderness opposite internal os, with small mass, size of a pea, one and one-half inches to the left, otherwise negative.

Operation.—Preliminary catheterization of ureter by Dr. Burton Harris. Transperitoneal incision. Stone found about one and one-half inches from the bladder, and removed without difficulty. I considered the possibility of a left salpingitis, which I did not find. I removed the stone by splitting the

ureter, sewing up with plain gut. I questioned whether to drain subperitoneally, and I did drain by making an opening through the vagina and going up. This drain was thrown off by the patient two days later and there was a urinous odor for five days. This drain was placed through the cul-de-sac under the peritoneum.

Post-operative Course.—Temperature varied from 101 to 98. Pulse from 68 to 110. Considerable vomiting and nausea during first few days. Catheterized, twelve ounces of urine obtained ten hours after operation. Voided spontaneously after this. Vaginal drain expelled spontaneously on second day. Primary union of abdominal wound. Patient discharged cured eleven days after operation.

Tubercular Peritonitis.

By Dr. Judd.

The third case I wish to present is one of general tuberculosis of the peritoneum.

B. S., aged 19, single, Gallician, dressmaker, admitted September 26, 1913. Family history negative. Past history negative. Menstrual: began at 14, regular, 30 days, lasting 6 days, with considerable loss of blood and much pain. Habits good.

Present History.—Began about September 5th with pain, not very acute, not definitely localized, but for most part in lower abdomen; kept on intermittently for two weeks with occasional constipation. Six days ago (September 20th) patient began to have chilly sensations and fever, followed by frontal headache. Next day pain in lower abdomen increased, sharp and cutting in character, and referred to navel and lower abdomen. These symptoms were accompanied by anorexia and constipation. Took to bed because of weakness, felt better, but on getting up again felt worse. On day of admission had chills, fever, sweats, frontal headache, abdominal cramps, slight cough, no vomiting.

Chief Complaints.—Abdominal pain, frontal headache, chills, fever, sweat, anorexia, constipation.

Physical Examination.—General, well-nourished girl of about 20, not acutely ill; does not show dyspnoea, cyanosis, nor jaundice; cheeks flushed. Head and neck negative, chest negative. Abdomen rounded, tympanitic, no masses, rigidity or free fluid; tenderness in left lower quadrant and epigastrium. Spleen, liver and kidneys negative. Skin, lymphatics and reflexes negative.

Clinical Course.—On medical side. First two weeks ran temperature showing diurnal fluctuation between 99.4 degrees and 103.2 degrees. Pulse, 96 to 114. Respiration, 24 to 26. Complains of pain in abdomen and headaches. Transferred to gynecological side October 13th. Operated on on October 14th. Ran temperature between 99.4 degrees and 103.6 degrees up to October 21st, with diurnal fluctuations; temperature then gradually fell, though preserving its diurnal variation. Pulse 140 on 14th, gradually falling, with diurnal fluctuations to between 60 and 100. Respiration 24 to 28.

Operation.—Transverse incision. Peritoneum opened, found studded with milary tubercles. Small amount of fluid escaped. Omentum very much thickened and studded with milary tubercles, which covered uterus and adnexa. After omentum was separated about a quart of fluid escaped from peritoneal cavity. Intestines matted together and studded with tubercles. Uterus infantile. Both tubes studded with tubercles, very much thickened and adherent together behind and above the uterus. Small abscess in right tube. Supravaginal hysterectomy performed, removing both tubes and ovaries. Stump of round and broad ligaments brought into cervical stump. Abdomen filled with oxygen and closed in layers.

Operation Findings.—Parietal peritoneum thickened; omentum and organs beneath plastered to each other and to anterior abdominal wall. Free straw-colored fluid in abdomen. Distal extremity of right tube distended with caseous material to size of ordinary ovary, adherent to distal end of left tube behind uterus. Entire peritoneum covered with milary tubercles. Uterus and appendages closely adherent to surrounding structures. Removal attended with great difficulty.

In this case the right ovary was slightly anterior to its normal position.

Acute Suppurative Salpingitis.

By Dr. Judd.

H. L., aged 22, married, Russian. Admitted to the Jewish Hospital October 2, 1913.

History.—Married one year, no children, one miscarriage three months ago, two months' pregnancy. (Cured at another institution.) Menses at 15,

28-day type, no pain, moderate flow, four days duration. Menstruated two weeks after curettage, September 26, 1913. Last regular normal menses five months ago. Present illness: About one month ago patient was curetted for an incomplete miscarriage, remained in hospital two weeks and left in good condition. On the 27th of September, five days before admission to the Jewish Hospital, patient was seized with sharp pains all over the lower abdomen, which came on suddenly, accompanied by severe chill and fever, no vomiting. Pain subsided somewhat and became localized in left iliac region. Vaginal bleeding now increased. On admission to the Jewish Hospital she complained of pain in the left iliac region and right hypochondriac region.

Examination on Admission.—"Sick-looking woman." Temperature, 101; pulse, 100; respiration, 24. Abdominal: Abdomen somewhat distended. Tender mass felt in left lower abdomen opposite anterior superior spine of ilium. Extreme tenderness over gall-bladder, with mass the size of a hen's egg felt just below the free border of the ribs. Rigidity of right rectus; tenderness on pressure over right lower abdomen. Vaginal examination: Multiparous introitus; cervix small, soft; uterus slightly enlarged, anterior position; pushed into right fornix. Extreme tenderness on moving uterus. Left fornix empty. Pressure upwards discloses lower edge of mass felt abdominally.

Blood Count on Admission.—October 2, 1913, W. B. C., 9,600; R. B. C., 4,490,000; Polys., 81 per cent.; Small lymphocytes, 19 per cent.; Hg., 60 per cent. Urinalysis: S. G., 1.022; trace of albumen, microscopically negative. Blood pressure, 110 Hg.

Patient improved, mass in gall-bladder region gradually disappeared, tenderness disappeared, condition of lower abdomen remained the same. Day before operation: Temperature, 99.6; pulse, 100; respiration, 24. Blood count: W. B. C., 9,400; polys., 83; mono., 17.

Patient taken to operating room on second day after admission. Examination under anæsthesia: small uterus, slightly backward, in median line. Cystic mass in right fornix. Left tube and ovary felt high up in pelvis.

Abdomen opened in median line. On opening peritoneum a considerable quantity of sanguineous fluid was observed. Left tube congested and enlarged and adherent with left ovary to sigmoid (mass felt abdominally). Small peritoneal cyst at fenestra. Acute suppurated salpingitis, involving the ovary on right side and adherent low in pelvis. Uterus large, congested, covered with lymph, small perforations on posterior surface near cervical junction to right side, covered with exudate. Right upper abdominal quadrant examined and in doing so about a pint of encystic serous fluid escaped. Gall bladder negative.

Papillary Cystadenoma of Ovary.

By Dr. Judd.

The specimen I have here is from a case which I had the pleasure of assisting Dr. Schwartz with yesterday afternoon. When the doctor opened the abdomen he found the omentum adherent to everything. He had to dissect it away from the bladder and uterus, and the result was the mass you see. It was removed from the uterus after two hours' work and with great difficulty. What surprises me is that a growth of a papillary cystic ovary should be both intraligamentous and extraligamentous, probably due to erosion, the solid portion growing down through the broad ligament, the upper part being above the broad ligament. The specimen is very interesting. The case history is as follows:

J. C., aged 42, admitted to Jewish Hospital November 4, 1913. Past history negative. Married 15 years, never pregnant, no operations. Menses 28-day type; severe pain during first day of flow; moderate flow; three days' duration. No change after marriage. Menopause one year ago.

Present illness dates back three years. Patient suffered from attacks of abdominal pain; no vomiting, no bleeding. Two years ago was told she had a cystic ovary. About two years ago had an attack of abdominal pain with frequency of urination and swelling of both legs; was ill for about two months. Recently noticed growth of abdomen. Occasionally would have attacks of dyspnoea and marked constipation. Would suffer very severely on taking cathartics or enemata.

Dr. POLAK, referring to the case mentioned by Dr. Judd:—"I saw a case, in consultation with Dr. Holden, a short time ago, where the patient was in an extremely bad condition when she was brought into the hospital. She was placed in the Trendelenberg position, given three-eighths grain morphia hypodermatically and her blood pressure taken every hour. In the morning it had risen from 90 to 110 and we decided to wait for further improvement in her condition and twenty-four hours later the blood pressure had risen to

120. In that case there were no clots. The abdomen was full of fluid blood. As soon as the abdomen was opened and the intra-abdominal pressure was relieved the bleeding commenced again from the point of rupture. I have seen a number of these cases and it is my belief that where the hemorrhage takes place slowly there is usually a clot, but where the bleeding is active there is less likely to be clotting.

"Dr. Judd said that he would like to get some points on whether he had waited long enough in his case, or too long, and what was the cause of the delirium and rise of temperature."

Cystic Fibroid of Uterus.

DR. DICKINSON presented a specimen of cystic fibroid, partly intraligamentous.

Mrs. M., aged 42, with good general health; has had pain in the abdomen about thirteen years, with enlargement for some years. Two children; some dysmenorrhœa; little menorrhagia. The tumor reached from the liver surface to the coccyx, its lower half solidly filling the pelvis. The diagnosis, on account of the elasticity, was ovarian cyst, or fibroid, or both. The lower right half is fibroid, behind a small and tilted uterus, and the remainder cystic. The several masses, all solidly held together, are full of clear, yellowish jelly, through which run white trabeculæ. The very large area over which the peritoneum was lifted made the removal last over an hour. Both ovaries and tubes, and the adherent appendix were removed. The cavern was peritonealized fully.

Here is a point of interest. This patient had a considerable laceration of the pelvic floor. We know how a prolapse quickly occurs when removal of the lift of a tumor allows the pelvic roof to fall in cases, and this takes place even when the vagina (or cervix) is carefully swung on the round ligaments, so my quick-action, one-strand, two-knot perineorrhaphy was done. This patient went along well to the tenth day, but now has what I predicted as likely from the thumb-sized veins of the tumor—an active phlebitis.

We hear of cystic fibroids; we seldom see them. Here is an unusual variety of these infrequent growths. Olshausen's list of twenty-seven has only four intraligamentous cystic tumors. This is small beside one of the above, which weighed over forty pounds, and in other varieties 195 pounds has been touched. Most tumors of this kind are pedunculated, some are sessile. They may be merely edematous, or softened from fatty degeneration. Those riddled with small flattened cavities containing yellowish fluid are the lymphangiectatic forms. The type presented is the myxomyoma, full of mucin.

Clinically these tumors are usually diagnosed as ovarian cysts, which their rapid growth seems to confirm. They almost always present massive vessels and bleeding is sometimes uncontrollable without elastic ligatures. Adhesions are frequent. Brewis used up 150 ligatures and four hours on a twenty-pound pedunculated cyst and his patient recovered.

Fibroma of the Ovary.

DR. MACNAMARA presented three specimens, with case histories.

C. M., aged 50 years. About a year ago noticed the abdomen beginning to enlarge with protrusion of the umbilicus; abdomen became greatly distended. She was operated on on September 12, 1913. There was about two quarts of straw-colored free fluid in the abdomen. The free fluid was sterile and contained mostly mononucleated cells.

Fibromata of the ovary are so rare that Sutton regards them as pathological curiosities. Up to 1895 Senn had met with only two cases, one of them of ten years standing. The operation was postponed until the patient was driven to it by a very extensive ascites. Senn says he has come to regard ascites as an important diagnostic evidence of tumor of the ovary.

The pathological report is as follows: Nature of specimen: A large nodular tumor, somewhat lobulated. In some areas it is quite firm, in others having a "doughy" feel, as if cystic. The surface is smooth and glistening. In one area on its lateral aspect, about 5x4 cm., there is a whitish, smooth plaque, cartilaginous in appearance. On section the tumor is of fibrous character. In areas, however, there are cysts filled with yellow gelatinous, flaky fluid. There is one area 2½x3 inches which appears myxomatous. The tumor measures 6½x4½x3½ inches.

Microscopical Examination.—This shows a tumor that is essentially fibromatous. In certain areas it is undergoing myxomatous degeneration. There is no evidence of malignancy.

Diagnosis.—Fibroma undergoing myxomatous degeneration.

This case shows a somewhat similar specimen to that presented by Dr. Dickinson. It is a six-pound ovarian fibroid removed from a woman 50 years

of age. This woman had had her cervix removed by Dr. Burns 25 years ago by his cautery method and up to her menopause did suffer at times from stenosis of her cervix.

Adeno-Carcinoma of Uterus.

M. H., aged 42 years, married. Had had bloody vaginal discharge for two and one-half months, also continuous watery discharge. Admitted September 19, operated upon October 10, 1913.

The pathological report is as follows: Nature of specimen: Uterus, tubes and ovaries. The uterus is enlarged and shows extensive malignant change in the cervix. This change appears to be limited to the mucosa and submucosa and has the gross appearance of a malignant adenoma. The tubes and ovaries are thickened. Microscopical report: A section of the tubes shows chronic interstitial changes in the different coats, but most marked in the mucosa. A section of ovary shows beginning fibrosis. In the stroma are several corpora lutea. A section of the uterus shows an adenomatous type of tumor which is infiltrating the submucosa and muscular layers. Acute necrosis, probably inflammatory in origin, has occurred in the mucosa. The tumor is malignant. Diagnosis: Chronic interstitial salpingo-oophoritis. Adeno-carcinoma of uterus (inflammatory gangrene).

This case shows the amount of destruction that can go on in carcinoma and yet the cervix not look bad. She had pain, but no bleeding. There was albumen in the urine and we waited two or three weeks before operating. She was previously curetted and we got material that confirmed the suspicion of malignancy. Visual examination did not show the extent of the disease. The mass in the abdomen extended three inches above the symphysis. We performed a panhysterectomy on October 10, 1913, and barring an infection of the abdominal wall she made a good recovery and appears much improved.

Chronic Interstitial Endometritis.

M. R., aged 40 years. Bleeding freely twenty days a month. She had been curetted on two previous occasions, the latter part of March and about four months ago by my predecessor on the service. Vaginal examination showed a narrow vagina, cervix normal apparently, and a normal uterus.

The pathologist's report on the curettings made July 31st, are as follows: Nature of specimen: curettings. Section shows tissue the stroma of which is very cellular. Glandular tissue is also seen. Some of the glands show a break in the continuity of the substantia propria, with a breaking through of the lining epithelium. The cells of the stroma are epithelial in type. Diagnosis: Carcinoma.

August 7, 1913, a hysterectomy was performed and the pathologist's report on the specimen is as follows:

Nature of Specimen.—Uterus and both tubes. Pathological report: The uterus is about normal in size. On its posterior aspect about the region of the internal os is a small globular fibroid about 2½ cm. in diameter. It is interstitial in type. The external os presents a stellate tear. The mucosa of the cervix is congested and in some areas it appears necrotic. The musculature of the uterus seems to be undergoing some fibrosis. Grossly there is no sign of malignancy. Diagnosis: Microscopic: Sections of the uterus. There is a chronic interstitial endometritis with some glandular hyperplasia. Some of the cells in the stroma surrounding the glands are epithelial (?) in type. While a positive diagnosis of carcinoma cannot be made, the endometritis may be of the precancerous type. Section of tubes shows chronic exudative salpingitis.

The two reports show the discrepancy between diagnosis before and after operation.

DR. JUDD:—"I had a case about six weeks ago in which I removed the uterus where the curettings had shown chorio-epithelioma. It has been my custom in the last four or five years to have all curettings examined. In the fourth specimen presented by me this evening I should not have discovered the true condition without doing so. In this case of chorio-epithelioma, when operated upon, the final pathological report made did not show any malignancy anywhere. I have no conclusions. I would rather take out one uterus which might be normal than leave one in that might give trouble later."

DR. POLAK:—"I wish to endorse what Dr. Judd has said about the routine examination of curettings. During the last few years it has been our habit, at the Jewish Hospital, to make such examinations. Where there is a doubt, I believe, it is better to sacrifice a few organs than to lose patients from cancer. All chorio-epithelioma are not malignant. Ewing's classification shows three types, and the type mentioned by Dr. Judd may be one of those cured by curettage."

DR. JUDD:—"How are we going to tell?"

DR. MACNAMARA spoke of the unwillingness of pathologists to give positive opinions on curettings unless the history of the case and anatomical relations are given, and mentioned one case where the examining pathologist refused to give an opinion.

DR. POLAK said that pathologists who try to tease out uterine scrapings in salt solution and examine the teased specimen are apt to miss the important tissues, that when the curettings are massed and blocked in celloidin and sections made of the massed specimen we will not infrequently find a group of cancer cells that might be missed in any other way. If a pathologist's report on curettings show cancer you have a right to remove a uterus, as it is only a step from a glandular endometritis to the more advanced condition.

DR. ROBINSON:—"Dr. H. Wilson, with whom I had experience, never teased out the curettings but immersed them in a bottle of celloidin and when they had set his specimen was all blocked. I believed it would be better to punch out a portion of the uterine tissue that seemed different from the rest, rather than to depend upon curettings."

DR. JUDD said that Dr. MacNaughton used in any suspicious case a punch similar to the instrument used by the nose and throat men for the tonsils. With this he would get portions of the uterine tissue for the pathologist.

DR. POLAK said that this method might be all right if the entire uterus were involved, but thought curettage was of more value.

DR. SHOOP then read the paper of the evening, entitled "X-ray Therapy. A Plea for its More Extended Use in Gynecological Cases." See page 7.

DISCUSSION.

DR. POLAK:—"I have taken pleasure in listening to the exhaustive paper by Dr. Shoop, but I feel that for this discussion you have not selected one who is so well versed in the X-ray in gynecology as is my friend Dr. Dickinson. There are, however, a few statements I wish to make in relation to things I have seen and of conversations I have had with some of the pioneers in this work. There is no question that the X-ray and radium have got to be recognized in the treatment of myomata and of malignant growths. This summer I was fortunate enough to be at the foreign clinics and I had several chats with Professor Döderlein in regard to the use of these agents and I listened to many remarkable statements made by some of the European operators. If Döderlein, with his carefully thought out reports, and with the slides referred to by Dr. Shoop, in the abstract of Döderlein's paper presented by him, can show such results, then it seems convincing evidence that there is something more than faddism in the use of radium. He was able to show by the microscopic slides and the lantern reproductions taken from the tumor at periods of six to ten weeks, absolute destruction of cancer cells and the substitution of small round tissue cells. In Munich not a patient has been operated on in one and one-half years, if there was any chance to use the X-ray or mesothorium. I met a physician who had taken his wife over for an operation with beginning cervical cancer. Döderlein refused to operate and subjected her to the X-ray and mesothorium. I am more and more convinced that the radical operation, or so-called Wertheim, does not cure these cases. The important point in the consideration of the X-ray is that we are apt to go too far in our enthusiasm. Can we always make a diagnosis of fibroid? I cannot. Unless we can make a positive diagnosis of fibroid we have no use for the X-ray. Menge has classified these growths, and says that there is a certain type of fibroid disease, a chronic fibrosis, or interstitial growths, with menorrhagia and metrorrhagia which gives good results from treatment by the X-ray. Pedunculated growths are not considered as suitable. We must first make the diagnosis, second know the type of growth, and third we have to remember that this treatment does produce amenorrhœa, by atrophic changes in the ovaries in the woman, if sufficient exposure is made to the X-ray. We are, therefore, confined to the cases which are past the menopause. And then there is the matter of expense. The cost is far in excess, taking it all in all. On the other side the patients are in three classes, the first two classes are expected to pay and are usually treated with the X-ray, and the third class are operated on. It takes a period of two or three months in many cases. There is another phase to the subject worth considering. Edward Martin has stated that he has found 10 per cent. of malignancy following the use of the X-ray, which is in contradiction to the reports of other Germans. I have not operated on a patient who has been subjected to the X-ray, without finding degeneration of the tumor. X-ray, mesothorium, and radium have come into use and we will have to recognize their use in selected cases. We will have to make other diagnoses and will have to know more about the use of these agents. At

Professor Gauss' clinic the methods were impressive in the treatment of these cases. The women were in a room with comfortable surroundings, with lounges, and there was an admirable library. There was a clockwork mechanism controlling the different directions of the rays in an extremely clever way. There is a serious aspect to this subject which must be taken into account. They are doing good work, but all of these German statistics should be taken with an extremely large dose of salt."

DR. DICKINSON:—"The selection of the man to do this work is not yet easy. Most X-ray men are diagnosticians, not therapeutists. There is a distinction. Most roentgenologists are not yet posted on this subject, nor have they the training to do therapeutic work. Dr. J. C. Clark has Dr. Pfahler, Dr. H. A. Kelly has Dr. Burnham. A few men have been over to the other side and learned the methods of the Hamburg and Freiburg clinics. For example, I sent a rather neurotic lady to one of these X-ray men in New York City. After the treatment she lost all her suprapubic hair, she turned brown below the navel, she got a bladder irritability and a colitis, and when these things let up she got amenorrhœa and a chronic metritis, and her menses stopped for four months. We have some American reports of German results that are worth considering. Dr. Howard Taylor was impressed by the work done at Bumm's clinic in Berlin. To see several cases with histories of cauliflowers of the cervix, and after radium was applied to see the cervices smooth and clean was striking. He had to take the word of the clinicians as to what the conditions had been; but he came home with the conviction that we must study the method. As long as the radiologists reported such cases we were sceptical, but when they are backed up by the gynecologists we have to accept the results. Intractable menorrhagias in women over 40 years of age are now called chronic metritis, and when not due to thyroid disturbances are proper cases for the trial of the X-ray. We should not take out the uterus until this has been tried. Dr. Gauss has simplified the treatment very much in the matter of time. What used to take months he does with stronger doses and better filter, in a few hours' treatment in a pair of sessions six weeks apart. This brings it within the limit of the finances of many people. Two of my patients that went to him this summer were markedly improved. I differ from Dr. Polak in one thing. I believe that there is a fair number of women over forty years old who may properly be subjected to trial of the X-ray.

"In a very considerable group of cases, for those who can afford the time and expense, and have access to the X-ray therapist (as distinguished from the diagnostician), resort to hysterectomy is no longer warrantable without trial of the ray. This group includes all the intractable menorrhagias of chronic metritis at 40 and over, and all myomas requiring treatment, except those infected, degenerating submucous or polyp, and those suspected of malignancy, and the very large tumors. The older the patient the better the response. All fibroids are said to shrink, all hæmoglobin percentages to rise.

"Menge declares that because of the difficulty of diagnosis between pelvic tumors and the need of knowledge of indications, the gynecologist should direct the X-ray treatment. He groups indications as follows:

"1. Myomas calling for operation. Large, rapidly growing tumors; all submucous polypoid growths; adenomyomata; cases infected, and degenerating, or those suspected of malignancy; younger women (below 40) with free bleeding and rapid development (leaving the ovaries), and, lastly, myomectomy for the few younger individuals keenly desirous of children.

"2. X-ray for all elderly patients with tumors of whatever size, particularly those that are stationary, not bleeding or causing kidney or heart blockade, or crowding the pelvis; those in women deeply anemic, diabetic, nephritic, bronchitic, arteriosclerotic, or with bad hearts or large thyroids.

"3. Leave the smaller tumors, showing no symptoms, alone.

"Brilliant results were seen where the hæmoglobin was 15 per cent. and 20 per cent. Eymmer and Menge advise disregard of a temporary increase of bleeding caused by the treatment and deny that two much emphasized fatal cases of Schönberg were due to the ray. Menge concludes that the X-ray will save from the knife of the surgeon most of the myomata that demand measures of relief, because these are usually in women over 40. To surgery belong, in general, cases needing interference that are under 40, those in whom conservation enter of the ovarian activity is desirable, all infected, degenerating and malignant cases, and those suspected of being in the last three groups."

DR. W. B. CHASE:—"I feel very much indebted to Dr. Shoop for the presentation of so many facts in his paper. I have been greatly instructed by

it. There is a large field for radiographic treatment and what its limitations are I am not prepared to say, but there is increasing evidence of its usefulness in these conditions."

DR. SHOOP, in closing the discussion, said:—"Both Dr. Dickinson and Dr. Polak spoke of restricting the use of the X-ray in hemorrhagic uteri to patients who have passed the menopause. The average age of such cases reported by Gauss are 35 to 38 years, the youngest being 25. One case I rayed was 19 years old, had both menorrhagia and metrorrhagia. The menses lessened to about normal flow and the metrorrhagia ceased. She lost her pubic hair, but did not mind that at all and seemed quite proud of the tan color she acquired.

"As I said in my paper, I wish to deny that the proper use of the ray is injurious to younger women, as treatment need not be pushed to complete or permanent amenorrhœa, unless it is so desired, because the therapeutic effect may be graded so as to get anything between a lessened flow and permanent cessation. Dr. Polak spoke of the expense—that is certainly not greater than for operation, practically the same.

"The time necessary for treatment is very much less than for operation, and that is quite an important consideration for the woman who has to earn her own living. The time lost by a patient who is operated on, including the period after leaving the hospital until she is able to again take up her work is five to six weeks. If she comes for X-ray, she loses only the half or whole day for two or three days each fortnight while under treatment, keeping on with her work and earning the money for her support, and the payment for her treatment as well, unless she be a charity case. The effect of the raying is usually pleasant, soothing, makes her feel sleepy—some do go to sleep under it. Sometimes she will feel, the next day, a little headache, languor, or even some nausea which, however, soon passes off. Alopecia is apt to occur when raying over the pubes, and she should be so forewarned. I am not in favor of the extreme massive dose of two treatments referred to, as there is where you are more likely to do damage to other tissues, possibly to the intestines. It is better to use the dose described in the paper, over a period of one and a half to two and a half months. With reference to the danger of carcinoma following the use of the ray in fibroid cases, Dr. Gauss states that it is well known that a certain proportion of fibroids show also carcinomatous degeneration and that in his experience with all the cases he has rayed, that percentage is no larger than in the same number of fibroid cases unrayed or who have undergone other operations for fibroma.

"Referring to the treatment by radium, I am not so familiar with it as Dr. Chase is, and so cannot add to his statements. As to the use of electricity in treating fibroids, I assisted my uncle, the late Dr. J. N. Freeman, in 1886 and 1887, in using that agent. The cases of single fibroma gave better results than those of multiple fibromata. He did not use the galvanic current as used by Apostoli, but used needles, thrusting the negative needles into the tumor, through the skin or vaginal surfaces, and the positive in the uterine canal. He got good results in small fibromata and in one case of large fibroma. His work was cut short by his death and I did not follow it up as hysterectomy, after the improved methods, gave better results than that of electrolysis, and I now accept the X-ray as a still better treatment in selected cases."

DR. SHOOP presented a specimen of abdominal pregnancy, through the courtesy of Dr. Sully. It was passed round in the form in which it had been removed from the abdomen of the patient and later opened for deeper inspection. The notes of the case were read by Dr. Shoop, as follows:

Mrs. C., aged 40, residence Manhattan. Married seven years; had one miscarriage about six years ago, and one year later had what she described as an operation on the neck of the womb for abscess. Eighteen or twenty months ago she went to Dr. Sully on account of leucorrhœa and sterility. He found an eroded cervix, profuse leucorrhœa, retroversion of uterus and cervix anterior. After a few months' treatment her condition improved and her menstruation, which had been regular, failed to appear, November, 1912 (last flow in October), and she began to have the usual signs and symptoms of pregnancy. She then passed out of his sight and he did not hear from her again until August, when she sent for him saying the waters had broken. Because she was over-due and because of previous history, thinking there might be complications which would render labor difficult, he sent for me to see her with him.

Examination.—The abdomen seemed small for a full term child; there was a mass towards the right side, and a smaller, more central, just within the pelvis, feeling like a fœtus and a fœtal head—yet the mass also felt hard, somewhat

like a fibroid; I thought I could detect a little fluctuation. Fœtal heart sounds were absent, though a sound like placental or uterine bruit, could be distinctly heard. The napkin was soaked with what seemed liquor amnii. The cervix was hard and jammed up in front, just behind the pubic bones, and no dilatation had begun. I told Dr. Sully I thought the fœtus might be dead, that there was probably fibroma of the uterus, and advised waiting until the pains came on and the cervix began to dilate.

September 15th. I saw her again, no change in conditions; patient was well, but tired of waiting, slightly anemic, though well nourished. On examination I thought I detected fœtal motion, but could not get fœtal heart. Cervix about the same, still rigid; there was no odor from vaginal secretion. Advised waiting.

October 5th. We again saw her in consultation with Dr. W. B. Chase. We found things much the same as we had seen them before, though he thought the cervix was a little flattened, and that he could detect slight fœtal motion. Dr. Chase thought in the light of the history of the case that, perhaps, if pregnancy had started in November last, that particular pregnancy might have subsided either by death of the ovum, or possibly what seemed like a fibromatous condition of the uterus may have crowded out the life of that fœtus and a subsequent pregnancy may have started. If the latter supposition were correct, he argued, that it would be improper to interfere by operative procedure at this time, and advised the patient to wait the course of nature for a while longer. At this time also milk appeared on squeezing the nipple. The vagina had the congested purplish color characteristic of pregnancy.

Later the patient was not satisfied to wait longer, and she and her husband urged Dr. Sully to do something to relieve her, so he called in another consultant. Upon examination he was inclined to ignore the history of pregnancy and stated that if pregnancy ever had existed she was not pregnant now, and asserted positively that the mass in the abdomen was nothing but two fibromatous masses, the smaller one having been mistaken by us for the fœtal head, and advised immediate operation. He sketched what he deemed to be the true condition. The patient and her husband then prevailed upon Dr. Sully to have the matter cleared up at once by operation, and the patient went into Dr. Lloyd's Hospital, No. 8 St. Nicholas Avenue.

On October 31st I operated, with the assistance of Dr. Wade, Dr. Sully and Dr. Chase, removing this specimen. Before operating Dr. Wade also examined the patient and was inclined to support the opinion advanced by the other consultant, that it was only fibroma, thinking that the appearance of milk in the breast might be due to former pregnancy or irritation from the growing fibroma. Dr. Sully adhered to the idea of there having been a pregnancy started and supported Dr. Chase's views.

When we opened the abdomen this mass presented with the very small, nearly normal-sized uterus, adherent in front and by its right tube, looking for all the world like a malignant cyst, possibly containing pus, or like a dermoid cyst, as suggested by Dr. Lloyd, the anæsthetist. After tedious work along lines of cleavage, separating coil after coil of intestines, and dissecting down between layers of broad ligament until two-thirds of the mass was freed, it was



FIG. 1.—Relative size of tumor to uterus and relations when *in situ*.



FIG. 2.—Specimen as it appeared before opening it.



FIG. 3.—Shows fœtus removed—cord running up to placenta inside of cyst. Placental site near tubal insertion in cyst.

Cyst is probably the expanded fimbriated extremity of tube.

thought if the trocar were used it might facilitate matters, but the result was negative, no pus, no fluid or blood, and when trocar was withdrawn, a brownish-red friable mass presented in the hole, looking like papilloma to all of us. The finger was then introduced well down into the mass and the true state of affairs determined. Then cutting loose, fearlessly, the lower adhesions the entire specimen was removed, cutting the right tube off in the cornua of the uterus.

The right ovary was full of small cysts, and as its circulation was interfered with and attachments mutilated it was also removed, the uterus suspended, and left ovary and tube left intact, apparently normal. No fibroid material was found in the abdomen. The specimen was slit open, finger diagnosis confirmed and specimen closed up in order to show it as nearly as it appeared to us before opening.

It proved to be a tubal or tuboligamentous pregnancy with the placenta entirely within the specimen and attached to the expanded fimbriated end of tube.

DR. CHASE:—"This is a specimen where the diagnosis was made after removal, and it goes to show the difficulty, and often impossibility of making a correct diagnosis in conditions of abdominal tumor. Here was a woman of forty years of age with an abdominal enlargement, the mass hard and even, with some signs of pregnancy and yet when operated upon it proved to be this. I was positive of getting foetal motion at the first examination, and this foetus of perhaps five months confirms it. The cystic condition still remains to be seen, and whether it is the terminal portion of the tube we do not know, or it may be connective tissue or a portion of the broad ligament. It was not a secondary rupture of the sac and escape of the foetus into the abdominal cavity."

DR. JUDD:—"It appears to me to be a pregnancy in the horn of a unicornated uterus."

DR. CHASE said that there was no evidence of the presence of the fimbriated extremity of the tube at the time of the operation, and it was not a cornual pregnancy. The rest of the uterus was normal in shape.

DR. SHOOP:—"The tumor is in the broad ligament, probably having started near the fimbriated extremity of tube. The foetus and placenta are entirely within the sac. The proximal two-thirds of the tube was not enlarged and the uterus was not misshapen."

Dr. Shoop presented a cyst which he removed from the left labium majora of a patient in Dr. Jackman's private hospital two weeks ago. The specimen is smaller than when removed, due, partly, to escape of the contents and partly to shrinking in the formalin solution. It was originally five inches long and two and one-half inches in diameter. The patient said it occurred just after confinement twelve years ago and since that time two children had been born without rupturing it. It was probably a vulvo-vaginal gland and was filled with a greenish-opaque fluid as thick as heavy molasses and odorless. The cervix was repaired before removing the cyst. The patient made a good recovery.

Medical Society of the County of Kings

MONTHLY BULLETIN TO MEMBERS

JANUARY, 1914

MINUTES OF STATED MEETING.

JANUARY 20, 1914.

The President, Dr. J. Richard Kevin, in the Chair. There were about 260 present. The meeting was called to order at 8.30 P. M.

The retiring President, Dr. James M. Winfield, received the reports of the following officers and Committees for the year 1913:

- Report of Secretary.
- Report of Treasurer.
- Report of Membership Committee.
- Report of Committee on Directory for Nurses.
- Report of Committee on Entertainment and Reception.
- Report of Committee on Legislation.
- Report of Committee on Public Health.
- Report of Milk Commission.
- Report of Visiting Committee.

Report of Historical Committee.

Report of Directing Librarian.

Report of Board of Trustees.

On motions, duly made and carried, all the above-mentioned reports were received, accepted, and ordered on file.

The President, Dr. J. Richard Kevin, again assuming the Chair, the minutes of the preceding meeting were read and approved.

Report of Council.

The Council reported favorably upon the following applications for membership: Benjamin Aquaro-Deodati, 637 Lorimer St. Gerhard W. Heuser, 560 McDonough St. Leon E. Lesser, 28 Douglass St. Samuel James Post, 1857 93d St. Robert Schulman, 237 Rutledge St. Milton I. Strahl, 164 South 4th St.

Election of Members.

The following, duly proposed and accepted by the Council, were declared elected to active membership:

Wm. Byron Agan, 981 East 14th St.
Wm. Howard Barber, 905 Union St.
H. Wright Benoit, 442 Grand Ave.
Helen Dudley, 123 Joralemon St.
David Feiner, 216 South 3d St.
Thos. Bernard Kenny, 408 Westminster Road.
Henry John Kohlmann, 532 State St.
Francis William Moore, 898 Sterling Pl.
Jacob Mauritz Morin, 1115 Bergen St.
Julius M. Nova, 1 Hanson Pl.
Samuel Parnass, 1218 Herkimer St.
John H. Schall, 119 St. Marks Ave.
Wesley G. Simmons, 956 Greene Ave.

Applications for Membership.

Applications for membership were received from the following:

Anna M. Agnew, L. I. State Hospital; Univ. of Minn., 1899; proposed by E. H. Mayne; seconded by Membership Committee.
Donald M. Gildersleeve, 184 Joralemon St.; L. I. C. H., 1912; proposed by B. B. Mosher; seconded by C. P. Gildersleeve.
Sanford Shumway, 442 Lafayette Ave.; L. I. C. H., 1911; proposed by J. A. Lee; seconded by O. A. Gordon.
William L. Suesholtz, 180 Martense St.; L. I. C. H., 1907; proposed by R. S. Fowler; seconded by Membership Committee.
Royall H. Willis, 214 Park Pl.; L. I. C. H., 1896; proposed by E. E. Cornwall; seconded by Membership Committee.

Scientific Program.

1. President's Address.

By J. Richard Kevin, M.D.

2. Paper: "The Fractures of Childhood."

By William Francis Campbell, M.D.

Illustrated by lantern slides and discussed by Drs. J. Bion Bogart, Lewis Stephen Pilcher and James P. Warbasse.

3. Paper: "Some Observations on the Use of Sera and Vaccines."

By William H. Park, M.D., of Manhattan.

Discussed by Dr. Simon R. Blatteis.

A rising vote of thanks was tendered Dr. Park for his courtesy in presenting his paper to the members of the Society.

Miscellaneous Business.

A letter and resolution from the Cortland County Medical Society was read by the Secretary, and on motion, duly made and carried, was referred to the Delegates to the State Society.

The following preliminary suggestions were presented by Dr. William J. Cruikshank, Chairman of the Committee on Medical Economics.

"MR. PRESIDENT: The recent date of our appointment will explain why the Committee cannot report progress or even organization. However, we wish to take this opportunity of expressing our desire to serve the Society in

the work assigned us and our appreciation of the responsibility devolving upon us. We realize that the appointment of a special Committee on Economics, where no such Committee existed, means a recognition of the gravity of the problems which to-day confront the medical profession, problems which scientific endeavor has not only caused us to ignore, but at least one of which scientific achievement has actually created—I refer to the lowered death rate, the aim of every physician, but the cause by which his income has been seriously lessened. How to meet the new conditions is a matter not only worthy, but imperative: it involves such questions as legislation creating pseudo-specialists; the sale of patent medicines; counter-prescribing; lodge practice, charity abuses and medical education; and on all of these the Medical Society of the County of Kings should indeed have a well-defined policy. Other questions without the realm of science demand attention, and every medical body should be ready to speak in no uncertain terms on subjects of such vital import to the public as pure foods and drugs, substitution in prescriptions, quarantine regulation and their like. We feel that the appointment of a Committee on Economics comes from the realization that the medical profession owes a duty to itself and to the public, outside its scientific efforts; for ourselves, we believe that the two are closely related, since whatever is accomplished to better economic conditions for the physician will increase the efficiency of the profession.

"If we have read the purpose of our appointment aright, we have at least the will to serve the Society with our best endeavor."

The Following resolution was presented by Dr. Louis V. McGovern:

"WHEREAS, In direct violation of the Civil Service Law the recently elected Coroners of Kings County have seen fit to arbitrarily force the retirement of Drs. Wuest and Hartung as Coroner's Physicians, a position which these men have faithfully and eminently filled for some fifteen years; and

"WHEREAS, The aforementioned coroners have illegally appointed two physicians as Coroner's Physicians who are in no way qualified, according to the Civil Service Law, and who are not at present on any eligible Civil Service list for the aforementioned position; be it

"Resolved, That the Medical Society of the County of Kings protest against the arbitrary and unlawful action of the Kings County Coroners in regard to this important medical office, and that the Secretary of the Society be instructed to send a copy of these resolutions to the Civil Service Commission, and to His Honor, the Mayor of New York City."

Motion was made to lay this resolution on the table, but was lost. After discussion by Dr. W. J. Cruikshank, it was moved and carried that the matter be referred to the Council.

Adjourned at 10.50 P. M.

BURTON HARRIS, *Secretary*.

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Original Articles.

WHY THE UTERUS SHOULD NOT BE CURETTED. A SUBSTITUTE FOR CURETTAGE, WITH A REPORT OF 208 CASES.*

By Thurston Welton, M.D.,

of Brooklyn, N. Y.

Récamier devised the uterine curet. He first mentioned it in the medical literature in 1846. (*Annals de Therapeutique*, Vol. IV, p. 182).

For several years, in fact until about 1880, many workers, the majority, were vehemently opposed to the curet and uterine curettage. Their main objection was that, in a large percentage of the cases, infection followed in the wake of its employment.

With the birth of aseptic and antiseptic surgery the uterine curet came into its own and up to the present has had a popular reign. Here and there, however, certain gynecologists have curtailed their use of the curet, but the greater number of physicians still perform uterine curettage as did their fathers of a generation ago.

Eliminating the uterine curet as a means to a laboratory diagnosis and confining the question to one of therapeutics we have for consideration whether or not uterine curettage is justifiable.

To discuss in detail the various disorders peculiar to the female and the countless theories presented for our consideration by the many workers in gynecology as related to uterine curettage would be to write a volume. Therefore, I am limited to a mere outline of the subject.

As a preliminary we will consider uterine bleeding. We may classify bleeding from the uterus under three general heads.

1. That type of case where menstruation is normal except that the flow is profuse or scanty. The uterus and appendages are normal and a pathological systemic condition is present. Among the systemic conditions we have as examples hemophilia, leukemia, typhoid fever, malaria, syphilis, lead or phosphorus poisoning, organic heart disease and cirrhosis of the liver.

Curettage will not improve, nor is it indicated in this type of case. Many practitioners, however, resort to the curet in a deluded hope that good results will be their reward.

1 a. That type of case where the scanty or profuse menstrua-

* Read before the Brooklyn Medical Society, November 21, 1913.

tion is caused by a pathological condition of the uterus or the uterine appendages. The trouble may be caused by malpositions of the uterus; or a pathological state of the adnexa may be caused by an ascending infection from the uterus, the endometrium being primarily attacked; or the infection may be a descending one and the changes in the uterine lining are secondary. To illustrate: An ascending gonorrhea in the first and a descending tubercular infection in the second type of case.

As we shall see, an endometritis accompanies these conditions and for this reason the curet is employed. We shall learn why the curet cannot do the work properly and why, at best, it is but a preliminary step to a procedure aiming at the source or end-result of the trouble.

2. That type of case where menstruation is regular or irregular but bleeding occurs between the periods. These cases invariably point to the uterus itself. To illustrate: fibroids, polypi, carcinoma, etc. In this type of case many men, failing to make a careful and thorough examination curet the uterus. The procedure not only does no good but is fraught with great danger.

3. The type of case where systemic diseases are excluded, where the woman has been regular or fairly regular in her menstruation and reports that she has gone over one or more periods and then suddenly began to bleed. This type of case is associated with some form of pregnancy. As examples we may mention the various types of abortion, miscarriage, ectopic gestation, etc. It is in this class that the curet is most often used.

Therefore, in Type 1 the curet has no use. In Type 1a, the curet is used and, at best, is but a preliminary step to a more complete operation. In Type 2, the curet should play no part. In Type 3, the curet has its greatest abuse. We shall soon learn why this is true.

The general practitioner curets for what he calls an endometritis. Pathologically the classification of the different forms of endometritis is still a debatable question. From a clinical standpoint we will divide the subject into acute and chronic endometritis.

In acute endometritis we may classify the chief causes as follows:

1. Infection following labor and abortion.
2. Faulty technique in office examinations of the vagina and interior of the uterus.
3. The results of operations lacking strict surgical asepsis.
4. Sloughing of intra-uterine growths.

It is elementary to say that a contra-indication to curettage is a septic condition of the genital tract. Therefore, the curet is used in these cases following labor and abortion in the absence of sepsis. Otherwise, according to our above tabulation of causes, the curet should not be used. We shall see why it has no place in even the first mentioned cause, after labor or abortion.

In chronic non-gonorrheal endometritis we have those cases which, from the acute type, terminate into the chronic forms, and those varieties in which no acute stage is demonstrable by clinical methods. Those that result from the acute type, as a rule, are from puerperal or post-abortion origin. Here again the curet is commonly used. The varieties that are not preceded by an acute stage are found in cases where we have present polypoid, tubercular

conditions and results of infectious diseases such as scarlet fever, typhoid, etc.

As can be seen the curet will do no good in this form of chronic endometritis.

Considering the etiology of chronic endometritis we have as causes: uterine displacements and malformations, subinvolution of the uterus, lacerations of the cervix, pelvic tumors, sexual excesses and chronic constipation.

The curet is employed as a relief of this condition when arising from some of these causes. When relief is recorded it is due to the accompanying treatment or operation and not to the curettage.

Therefore, the misleading term, endometritis, is often an excuse for curettage. In the pre-menstrual stage of menstruation, as demonstrated by Hitschman and Adler (1908), there is a thickening of the mucous membrane and increased glandular activity. These changes occur about seven days before the menstrual flow. In the post-menstrual stage the mucous membrane is thin and pale, secretions are absent, and the stroma consists principally of spindle cells.

Thus it is easily seen how often a diagnosis is made of a hypertrophic endometritis from the scrapings of a normal endometrium during the pre-menstrual stage in the menstrual cycle and of an interstitial endometritis from the scrapings of a normal endometrium of the post-menstrual period. Yet in ninety per cent. of these cases the curet is employed and providing it causes no harm, the curettment of a normal endometrium is later recorded as a cure.

In the light of these facts a pathological report in these cases loses its real value and the only definite way to be positive of the diagnosis is to perform a hysterotomy.

Among other common conditions in which the use of the curet has been its abuse in amenorrhea, secondary amenorrhea, menorrhagia, metrorrhagia, sterility, primary and secondary, leucorrhea and dysmenorrhea.

Primary amenorrhea is either due to a lack of growth of the uterine organs or to atresia of the hymen or vagina. Surely the curet has no place in these conditions, and yet how often it is used!

Secondary amenorrhea may be due to several causes such as menopause, atrophy of the ovaries, such constitutional diseases as leukemia, tuberculosis of the kidney, chronic nephritis, morphine habit, etc., or the amenorrhea may be due to grief, worry, fear, grave hysteria or melancholia, or from an acquired atresia of the genital canal.

To our mind we can dispense with the curet in any of these conditions and institute other treatment.

The subject of menorrhagia and metrorrhagia is too general to treat of in detail in this discussion. Among the local causes, according to Burrage, we have: uterine congestion, polypi, endometritis, abortion, extra-uterine pregnancy, subinvolution of the uterus, submucous fibroids, carcinoma of the cervix or fundus, sarcoma, inversion of the uterus, backward displacements, inflammation of the tubes and ovaries, artero-sclerosis of the uterine vessels, small cystic degeneration of the ovaries, and ovarian cyst with twisted pedicle.

In many of these cases the curet would do absolutely no good

and in the remainder the operation directed to the primary cause is of the only and real value.

Dysmenorrhea may conveniently be classified into, 1. Those associated with lesions of the uterine organs that can be diagnosed; 2. Those in which it is present but no abnormality of the organs can be determined. These cases are not frequent.

Congenital malformations of the uterine organs, retroposition with antelexion, pelvic inflammation and fibroids are the most common causes of dysmenorrhea. Uterine curettage is not indicated in any of these conditions.

Sterility is a condition in which the curet is very often employed by many physicians. In all cases of sterility the male first should receive attention. Kelly, quoting Sanger, and Lier and Ascher, reports that in 242 husbands of sterile marriages, 104, or 43 per cent., showed absence of living spermatozoa. Fifty-five of these had infected their wives, producing, as the authors assume, indirect sterility.

Primary sterility may be due to, 1. Impossibility of conception due to anomalies and diseases of the uterine organs; 2. Conditions of the uterine organs which cause pregnancy to be interrupted by causing the death of the fertilized ovum or fœtus; 3. Constitutional diseases, or general causes preventing conception or causing a cessation of conception after it has begun.

Secondary sterility is usually due to a gonorrheal infection.

Yet in all cases it has been customary by the majority to dilate the cervix and curet the body of the uterus. We admit pregnancy has occurred after this procedure. But in the cases where pregnancy results it is due to the dilatation and sexual rest and not to the curettage. Nevertheless we have overlooked several salient facts. What is the percentage of pregnancies following curettage in women who were previously sterile and how many women previously sterile conceive and either abort or miscarry; or how many women who had a chance before the curettage to conceive have been rendered permanently sterile? Work and figures along these lines would be interesting were it possible to collect them.

In cases of so-called "leucorrhea," where slides of the discharge have not been examined microscopically, or having been examined are reported negative, gonococci are often present. The curet acts as a carrier, in these cases, and the gonococci are carried past the internal os to the cavity of the uterus. It is interesting to note that in a large majority of ectopic cases a history is given of a curettage or curettages having been performed.

Prior to plastic operations on the cervix and perineum it is still a routine habit to curet the uterus as a rule so little considered that the house-surgeon is designated to perform this part of the work.

It is elementary knowledge that the uterus should not be curetted in the face of acute infection such as post-partum sepsis, acute salpingitis, etc.

In these cases where the curet is apparently indicated such as in retained secundi after labor or abortion in the absence of sepsis, endometritis (certain forms), as a stimulant to the uterus in atonic conditions, etc., you naturally ask, what are the objections to the curet?

In the hands of an inexperienced operator uterine curettage is not only a difficult but a dangerous procedure.

Perforation of a uterus is a common habit. At an autopsy I saw a uterus that had been curetted by a man evidently not accustomed to performing curettage. He had curetted a hole two by two and a half inches through the anterior wall of the uterus and a hole three by one and a half inches through the posterior wall of the uterus, reaching to the broad ligaments. The woman died of hemorrhage and shock. In clean cases mere perforation of the uterus in the majority of cases gives no post-operative complications. If infectious bacteria are present the most serious complications may arise ending even in death. Perforation of the uterus with a loop of intestine drawn down by the curet has occurred. We had a service case sent to the hospital that had been curetted and a loop of intestine drawn down through the external os. After pulling two feet of intestine out of the cervix the operators tried to push it back into the cavity of the uterus. The patient died.

Our main objection to curettage is that it is impossible to thoroughly curet a uterus. By thoroughly I mean; 1. To curet the uterus entirely; 2. To curet an even depth the entire lining of the cavity; 3. To curet and not penetrate the muscle itself.

We have tried to thoroughly curette a uterus, prior to a hysterectomy. As a surgical operation it has proved a dismal failure. Upon opening the uterus after removing it we found parts that the curet had not touched and areas where the curet had made deep furrows. Not only the writer but men of vast experience have reported many similar cases. It is true that a certain touch can be developed but it takes years of experience with hundreds of uteri and even then it is a sort of popular myth.

If in the hands of experienced workers such a condition is possible what damage must be wrought by those who lack surgical training and curet a uterus at rare intervals of time?

Those experienced with the curet will claim that the dull curet will not make deep furrows in the muscle. We will admit this in part. But the fact remains that even with the dull curet a uterus cannot be thoroughly curetted.

One writer says, that even though the uterus cannot be thoroughly curetted new epithelium will grow from the basement membrane and from the "islands of epithelium" that are left. Therefore, if our work, at best, can only be partly done, is it not time to think of another procedure that will do it thoroughly all the time?

According to Burrage the removal of the entire endometrium and submucous layer will prevent regeneration and cause the formation of scar tissue and subsequent sterility.

The occurrence of hemorrhage following curettage is not the rarest happening after labor or abortion when the uterine sinuses are large.

A case after curettage may give no immediate serious results. It is the end-result or results that we must consider. These engage our attention weeks, months, years, after the curettage. In case of a malignancy the curet will act the same as a match to oil and spread the condition in a manner that will amaze the physician in charge. Recently the opposite theory has been advanced but has not become a settled question.

It is folly to curet a uterus where there is an excessively congested endometrium resulting from large and over active ovaries.

It has been done, no doubt, in thousands of these cases and the physicians have wondered why the condition so quickly recurred.

In cases of fibroid of the uterus the curet is called into play to control bleeding temporarily in those cases where the bleeding is due to a hyperplasia of the endometrium. To quote Crossen, "In many cases, however, the cavity is so distorted that the curet can only wound parts of the wall here and there without removing the entire endometrium. In addition to this uncertainty of controlling the hemorrhage there is danger of infection of the uterine wall or infection and necrosis of the growth, leading to an exceedingly dangerous condition."

Bland Sutton ("Tumors Innocent and Malignant," 4th Edition, 1906, p. 187) writing of latent seedling fibroids says, "If a number of uteri be examined from women between the twenty-fifth and fiftieth years by the simple means of sectioning them with a knife, in a large proportion of these uteri a number of small rounded fibroids, resembling knots in wood will appear, their whiteness being in strong contrast with the redness of the surrounding muscle tissues. These discrete bodies, in many instances no larger than mustard seeds, are in histological structure identical with fully grown tumors."

With these thoughts before us we must admit that curettage in cases of well developed fibroids is liable to do great harm. Also in cases where one would not be led to suspect a fibroid condition there are often present these seedling fibroids, histologically identical with fully grown fibroids. In these cases a sharp curet scraping furrows in the muscle of the uterus is more than likely to traumatise these seedling fibroids and give rise to infection, necrosis, or act as a traumatic agent which will cause that which was lying dormant to take on sudden and new life.

Until recently many men and at the present time no small number curet the uterus in cases of post-partum sepsis. In any case of puerperal septicemia the curet is contra-indicated. This subject is of vital importance and the various forms of puerperal septicemia should be known. The inflammation may remain localized or be of the type of infection where the infecting micro-organism gets into the lymphatics to the cellular tissue of the pelvis or by the blood stream.

The spread of the poison may be rapid and in the large majority of cases fatal. Non-interference of the uterus is the law. A curet in such a case is criminal. The most common abuse of the curet in these cases is when a sapremia is present from retained material in the uterus. Feeling something must be done the family physician reaches for his curet and in many cases that which would have resulted in an uneventful recovery terminates in a prolonged sickness and often death. In all cases of post-partum or post-abortion infection the type of infection must be determined and in every type but one, the uterus should be left alone. We shall consider the exception in the case reports.

In those cases where curettage has been done and a good result is reported the case improves either in spite of the curettage or because an operation directed at the underlying lesion has also been performed.

In a large number of women who have entered the hospital for treatment we have left the interior of the uterus alone where

formerly we would have curetted. In those cases where the curet, according to our present teachings, is indicated we have employed a substitute in its place. We do not claim originality except in the proportion of the ingredients used. Chemicals have been used in the interior of the uterus for years but objections have been raised to all of them. To date the 50 per cent. of the official tincture of iodine has proved ideal. Dr. Wade reported this method in a paper two years ago ("A Common Abuse in the Practice of Gynecology." *International Journal of Surgery*, May, 1912). We have not found a better substitute. If, however, we hear of anything that we think an improvement on the 50 per cent. tincture of iodine we will give it a fair trial because we know advancement will be made along these lines.

Our method of using this substitute is as follows. The patient prepared, the cervix is held by a guy rope. The cervix is dilated. In all cases, except the cervix is widely dilated, we first use a dressing forceps, then a small dilator and lastly a large dilator. We "iron" the cervix in dilating. That is as we dilate we rotate the dilator slowly and try to equalize the pressure on all parts. By "ironing" the cervix and using different sized dilators little or no injury is done to the cervical canal. After the uterus is dilated strips of gauze, from 6 to 8 inches long, are soaked in the 50 per cent. tincture of iodine. A strip of the iodinated gauze is introduced into the uterus with the aid of a uterine sound. This is left about a minute, removed, and another strip of the iodinated gauze introduced. As a rule from five to eight strips of gauze are used. When a drain is required the last strip used is left in the uterus. This is removed, as a rule, in about eight hours.

In post-partum and post-abortion cases where material is in the uterus when we know a sapremic condition is present even in the face of temperature, we use the iodinated gauze as described above with the exception that we introduce and retain from two to five strips of gauze at once. Then securing the ends with a clamp the gauze is twisted and gradually withdrawn. This process is repeated from two to four times. (First the material in the uterus is removed as completely as possible with ring clamps. This is done without traumatizing the cavity of the uterus.)

As a final step one strip of the iodinated gauze is left in the uterus as a drain. In all cases where this method was used we had a movable uterus.

The 50 per cent. tincture of iodine has several advantages. It is readily absorbed into the tissues whereas the official tincture is not. In cases of endometritis it does the work which the curet was originally supposed to do. In atonic conditions and sub-involution before the process is finished the uterus contracts. It is an antiseptic and if infectious micro-organisms are present either in the uterus or the vaginal tract the iodine renders them harmless. It does not necrose the tissue and does not get into the tubes as some authors have claimed. In three cases we did not use the gauze but injected the iodine with a syringe. Later opening the abdomen we failed to see any evidence of iodine in the tubes. We have had cases following labor and abortions with retained material and a temperature of 104. The method described was carried out and within eight hours the temperature fell to normal or one degree above normal.

In small uteri and cases of sterility where the husband was not at fault and the trouble seemed to be with an undersized uterus, a tight cervix or an acute antelexion, etc., the cervix was thoroughly dilated, iodinated and a glass stem pessary sewed in the cervix after the method of Baldwin. The curet was not used. In misplaced uteri the endometrium was iodinated and the misplacement corrected.

In no case have we regretted using the iodine, while previous to using it we have felt that we did do harm with a curet.

Since July, 1911, to October, 1913, Dr. H. A. Wade and his assistant, the writer, on the first gynecological division of the Williamsburgh Hospital have iodinated the endometrium in 208 cases. Except for diagnostic purposes the curet was never used.

Unfortunately the question is mainly theoretical and it is impossible to say whether the iodine performed all it should. We have had no bad results that could be traced directly to the iodine. If in addition to the iodination a Webster-Baldy operation was done and months later the uterus was found out of place we do not attribute the condition to the iodine but to the major operation.

The 208 cases we have iodinated have been treated for from one to three or four conditions. For instance, a case has a lacerated perineum, lacerated cervix, retroverted uterus and a cystic ovary. Therefore, one diagnosis cannot be given it. In the following report we had to deal with 502 separate conditions in 208 women. With the exception of the abortion, sapremic and miscarriage cases, 49 in all, further surgical work was done besides iodinating the uterus to correct the pathological condition present. It is of interest to note the various findings, alone or in combination, in which the iodine was used.

The following are the cases:

Abortion, 34 (This includes all types).

Miscarriage, 2.

Post-partum sepsis, 13 (This only includes those cases where iodine was indicated. In many cases the uterus was left alone).

Anteflexed uterus, 10.

Endometritis, 48 (This includes only those cases where a clinical diagnosis of endometritis was made. No doubt in connection with other lesions an endometritis was present which we have not noted).

Infantile uterus, 7.

Sterility, 3 (We have named them sterility and not given the cause as no apparent cause was discovered).

Retroversion of uterus, 121 (In every case a repair of the pelvic floor was done).

Prolapse of uterus, 8.

Salpingitis (various forms), 48 (These were chronic cases. No acute cases are in this report).

Cystic ovary, 17.

Laceration of cervix, 63.

Laceration of perineum, 128 (The iodine was used to prepare the field above).

In conclusion it is emphasized that the curet is an instrument not capable of doing that which it was originally intended to do, that curettage of the uterus, in the hands of the inexperienced, is a difficult operation, that it is capable of doing more harm than

good, and that it is many times employed without reason, has become a habit handed down from a past generation and could be dispensed with as a therapeutic agent.

The 50 per cent. tincture of iodine, with the proper technique, is a better agent in place of the curet, and to date is the best substitute we have for uterine curettage.

CASE REPORTS.

SURGICAL SUBCUTANEOUS EMPHYSEMA.

LeGrand Kerr, M.D.,

of Brooklyn, N. Y.

AN infant girl eleven months old was taken ill on December 18, 1913, and her slight indisposition was treated by the parents as an ordinary rhinitis. Within a few days, however, the infant was much more ill and developed a persistent cough with slight rise in temperature. From the history as given it was apparent that she suffered from bronchitis, although it did not exclude pneumonia, and this persisted for a period of fifteen days. On the 14th and 15th days she was much prostrated and the temperature was apparently higher. On the 16th day (January 3, 1914) the parents called Dr. Henry Bruning.

His examination revealed the presence of a pneumonic process with a temperature of 104.

The infant's condition remained apparently unchanged for seventy-two hours and then after consultation with Dr. Fisher, Dr. Bruning performed an exploratory puncture in the center of an area of suspected fluid at the right base.

While this was being done, the remark was made that an unusually deep puncture was being performed. Each time that the piston was withdrawn it was accomplished without resistance, and no fluid was obtained. I saw the infant on the following morning for the first time. Besides a broncho-pneumonia, the examination revealed a marked, although quite uniform, enlargement of practically the whole of the right chest. Its anterior limit was close to the sternum; its posterior close to the spine.

The lower border was quite regularly defined, closely following the line of the lower border of the ribs. The upper border was most irregular, extending in part an inch above the angle of the scapula. When even the slightest pressure was made over any part of this area, there was most distinct crackling. The diagnosis of subcutaneous emphysema was apparent. This we believed to be surgical in its etiology, due to the operative injury to the lung.

This crepitating enlargement persisted unaltered for forty-eight hours and then began to subside, so that in five days from its onset it had entirely disappeared. The temperature subsided very gradually and on January 14th, Dr. Bruning pronounced the infant cured.

It was particularly noted in this case that although the chest was quite uniformly enlarged on one side, in the parts unaffected, and in particular above the clavicle, there was full expansion and no interference with the respiratory excursions.

At no time was the cough violent or was there any evidence of laryngeal obstruction.

The liver was not enlarged so that there was no impaired action of the diaphragm resulting in diminished entrance of air and impaired circulation of blood and lymph through the lower lobes.

We appreciate that subcutaneous emphysema might originate in an interlobular and interstitial emphysema of the lungs but in this instance the connection between the exploratory puncture and the onset of the emphysema is so clearly defined that we must consider it of surgical origin.

FURUNCULOSIS IN 19-MONTHS INFANT.

This infant was breast fed for one year and had experienced a perfectly normal development until the time of the present trouble. In October of 1912, there developed one superficial furuncle which was followed in a few days by three more that seemed to have their origin deep in the skin. These deep seated boils then continued to appear at rather regular intervals until December 30. The infant was under the care of a surgeon (or to be more accurate, a gynecologist) who had applied a strictly surgical treatment of the local condition without any attempted attention to the more general details. The treatment was invariably incision and drainage. Fifteen boils had been treated in this manner and as they did not develop about any particular area, the little girl was considerably scarred.

At this time, the father alarmed at the increasing scarring and the persistence of the development of the furuncles, asked Dr. Holt to see the infant. Dr. Holt then suggested that I see the girl first, and this was accomplished. At my first examination there were two boils in early stage of development. These were treated locally by thorough cleansing of their surfaces and the surrounding skin and the injection of tincture of iodine into the center of the inflamed area. Both aborted. Besides a strict attention to the details of elimination, diet and the avoidance of local irritation of the skin, a stock vaccine was administered and repeated on the third day. While I realized the advantages of an autogenous vaccine in these cases, I did not feel that the patience of the parents would stand much more temporizing, so the stock vaccine was chosen.

The result was immediate. There has been no further development of furuncles and the area about the aborted ones is clear. Outside of the fifteen scars left by the gynecologist, the girl shows no evidences of her prolonged attack. This and many similar experiences, emphasizes the fact that of all the vaccines, that for furunculosis is the most certain in its results.

EXPERIENCES (2) WITH THE SUBCUTANEOUS INJECTION OF SULPHATE OF MAGNESIA IN TETANUS IN CHILDREN.

Several years ago when I was in general practice, I noted the fact that very commonly after the administration of sulphate of magnesia, complaint was made that considerable depression was felt by the patient and this was invariably coupled with the explanation that the medicine had not "worked." Not satisfied with the patient's explanation, I was lead to observe the effect of the administration of the drug in children because in them our information is very largely obtained through objective symptoms and these do not lie if properly interpreted.

In practically every instance in which it was administered, sulphate of magnesia was followed by a more or less marked depression although it was practically impossible to determine just the nature of this depression. For a long time, I attributed the depression to the conditions which were present and which gave rise to the need of administering a cathartic. In nearly every instance, the magnesia was given as a sequel to the administration of calomel. I am now convinced that my interpretation of the objective symptoms of depression after the administration of sulphate of magnesia was wrong and that instead of symptoms from disease, I was getting symptoms from a drug. The result has been that I long since discontinued its use as a cathartic and have been compelled to bring it strongly to the attention of hospital internes because with them it is a favorite or rather routine method of procedure to administer it. This observation in regard to sulphate of magnesia has been strengthened by the two recent experiences with its administration subcutaneously in tetanus which I will now report.

Late in 1911 there was admitted to my service at the Methodist Hospital a young boy who was in the final stage of tetanus traumatica. The disease had progressed to the point when the musculature of the back and abdomen was involved and the child was in a position of extreme opisthotonus. Even the muscles of the leg were involved in the spasm, although those of the feet and toes apparently escaped. There was no detectable evidences of involvement of the musculature of the internal organs and the diaphragm seemed to act normally. However, the slightest motion was sufficient to exaggerate the spasm of the involved musculature.

Specific serum therapy was instituted at once although its probable uselessness at this stage was noted. In the endeavor to relieve the spasm to some degree, I immediately administered four ounces of a twenty-five per cent. solution of sulphate of magnesia. This was given subcutaneously and was ordered to be repeated in four hours if it did not have an effect upon the spasticity of the muscles. Within twenty minutes, the child's muscles began to relax and in less than one hour he was resting with apparent relief flat upon his back in the bed. But the difficulty was that this relief continued beyond the point of ease and the muscles of respiration ceased to work for a considerable period before circulation failed entirely. The child apparently died from respiratory paralysis in less than two hours after the initial injection of the sulphate of magnesia.

Within a few months after the occurrence of this experience, I was asked to see another child of six years suffering from tetanus traumatica which had an insidious onset but which had been recognized early and received adequate treatment of the wound, specific serum therapy and the institution of excellent general care. In spite of this, however, the course was progressive, and when I first saw the boy, I felt justified in classifying it as chronic tetanus, because of the long period of incubation, the unusual mildness of the symptomatology and the long course of the disease. Under such circumstances, we predicted death finally from exhaustion unless the course of the disease could be arrested in some manner.

Although mindful of our former experience, we recommended subcutaneous injections of sulphate of magnesia and these were

instituted as additions to the other treatment which up to this point had proved unavailing.

A twenty-five per cent. solution was used in this case and two ounces of this was administered on the first day with a rapid relaxation in the muscular tone generally. As the spastic condition of the musculature was greater after twenty-four hours, another two ounces was given with a similar result as after the first injection, although the child appeared much weaker after this second administration. In twenty hours, the child was given his third two ounces and promptly went into collapse and died apparently from respiratory paralysis.

In neither of these cases were we able to determine just what symptomatology was added to that of the tetanus by the magnesia, or what symptoms were exaggerated. It is easy to appreciate the difficulties which confront one under the circumstances.

But from these experiences, coupled with our observation of the effects of the salt given by mouth in a very large number of cases, we feel strongly that sulphate of magnesia is not without real danger as a general depressant to the muscular system and may have some direct effect upon the cerebral centers.

In future cases of tetanus, its administration will be along different lines, if I administer it at all.

As a cathartic for use among children, I feel that the sooner its use is abandoned in favor of less depressing drugs, the better for the child.

CASE REPORT.

OBLITERATING CHOLANGITIS ASSOCIATED WITH HEMORRHAGE OF THE NEW BORN.*

Roger Durham, M.D.,

of Brooklyn, N. Y.

UNDER the heading Congenital Atresia of the Bile Passages, in the *Quarterly Journal of Medicine*, July, 1912, Dr. L. S. Milne has correlated 78 cases that he was able to find in medical literature, and gives a full bibliography, with a case of his own.

These present certain common symptoms, lesions, etc., which I have briefly summarized as follows:

The parents were generally healthy, and syphilis was not a prominent factor except in a small number of cases. Pregnancy was as a rule uneventful, and was followed by an easy and normal labor. The condition was found most often in boys. Although the occurrence was, as a rule, in large families, in only one instance was the condition found twice.

The symptoms were: jaundice at birth, or shortly after; meconium normal and rarely lacking in pigment; stools usually clay colored, or if not they had received the coloring matter through the intestinal wall; death resulted in between 62 hours and eight months; there was in all a tendency to hemorrhages.

The essential lesion is some defect in the biliary passages, as absence of the common duct or obliteration of it; absence of the

* Read before the Pediatric Society, November 26, 1913.

gall bladder with atresia or obliteration of the ducts; or any combination of such anomalies. The liver becomes enlarged in the cases that do not succumb in the first few days, as a result of a cirrotic change. The author states that chronic peritonitis, or other inflammation about the larger ducts, is rare. Rolleston and others state that certain cases are due to a cholangitis in early foetal life following some toxic process. One is, however, forced to agree that the majority of these cases must be the result of congenital malformations.

The following is the history of a case occurring in my practice which I believe should be classed with the group given above. While the case is not complete in some details and proofs, yet in the main it will be hard to class it in any other way.

CASE.—C. B., male; family history, mother and father always well. Three other children (2 boys and a girl) normal. During pregnancy mother was perfectly well. Present history: mother was in labor eight hours and there was a normal L. O. A. delivery. Baby weighed $7\frac{1}{2}$ pounds, and appeared normal.

Second day. Baby has become markedly jaundiced; bowels and urine normal. Nurses every two hours in a normal manner.

Third day. Icterus is deepening. The dressings of the cord when changed are markedly stained with bile. The prepuce bleeds too freely when stretching is attempted.

Fourth day. Baby is fretful in the morning, bowels moving five times with black stools. The urine leaves a green stain on the napkins. 3 P. M.: During nursing baby is seen to become rigid for a moment and then about 3 drams of blood flows from nose. Temperature, 99.6; respirations normal rate but forced; some bloody mucus in throat; pulse small and about 150; pupils equal. Baby now in a stupor and does not rouse, and there is no cry. Grunting respirations persist. Examination shows few rales at both bases. 5 P. M.: Another hemorrhage appears from nose and mouth of a dram or two of bright red blood, not frothy; no cyanosis; death follows.

Post-mortem examination. Findings: deep jaundice of conjunctivæ and skin. Rigor mortis marked, also hemorrhagic area on forehead. All internal organs deeply jaundiced. Stomach contained several drams of blood. Heart pale and icteric; foramen ovale closed by thin membrane but not adherent throughout. Lungs: right, hypostatic congestion at base. Both lungs floated. Numerous adhesions about the gall bladder, gall ducts, duodenum and pancreas. About the gall ducts these adhesions presented a matted appearance. After careful dissection gall bladder was opened and twenty drops of bile stained mucus found in cavity. Gall ducts (common and cystic) were identified as very tiny thread-like tubes, through which a very fine needle could be made to pass with effort.

It appeared that these ducts were not functioning. Liver was not markedly enlarged.

CASE REPORT.

A CASE OF MULTIPLE PAPILLARY NECROTIC TUBERCULIDES.*

Louis C. Ager, M.D.,

of Brooklyn, N. Y.

THE classifications of the various lesions of the skin produced by tubercular infection differ considerably in the different text-books, as do the names given to the lesions themselves. Hyde and Montgomery in the 1900 edition say: "The generally recognized clinical forms of cutaneous tuberculosis are (1) lupus vulgaris, (2) tuberculosis verrucosa, (3) tuberculosis cutis orificialis, (4) scrofuloderma." In the edition of 1904 they have added several pages devoted to "Dermatoses Probably Tubercular," describing "Lichen Scrofulosorum" and "Erythema Induratum," and also four pages on "Dermatoses Associated with Tuberculosis." Under this title they describe those lesions called by various writers "Tuberculides," "Toxituberculides" or "Paratuberculoses." According to most writers these tuberculides in their pathology are similar to phlyctenular keratitis. That is, they are not produced by the actual presence of the tubercle bacillus, but by the irritative action of tubercle poisons secreted in other organs of the body.

At the Fourth International Congress of Dermatology and Syphilis, Fox presented an extensive "Report on Tuberculides" (*Brit. Jour. Derm.*, 1900, v. XII, p. 383). He says, "the essential lesion of the group of tuberculides is a small, extremely indolent granuloma tending to undergo central softening and necrosis, thus leaving scars. They are bilateral and symmetrical. The great clinical variety depends upon the depth at which the derma is affected, the implication or freedom of the glandular apparatus, the bulk of the granuloma, the distribution and number of the lesions and the absence or presence of pustulation or necrosis."

The symptoms vary according to the depth, size and location of the lesions. These begin in the deeper layers of the skin and extend to and involve the surface. They are at first colorless nodules, later becoming dusky red or purple. In many instances it is impossible to differentiate them macroscopically from syphilides of the necrotic type. They usually suppurate or become necrotic in the center and then heal with a depressed scar. The dermatologists have displayed their usual ingenuity in making an extensive classification of these lesions according to size, color, location, etc., but there are two main types,—“Acnitis” and “Folliculitis.” In acnitis the lesions are more superficial, small, discrete, occur in groups and are found chiefly upon the face. In the folliculitis type the lesions are usually found upon the hands, feet, arms and legs. They run a more acute course of about four or five weeks. According to Fox this condition is confined to adults, but later writers have described cases in children. Pfaundler and Schlossmann describes the lesions as follows:

“Where the nodule is found in a subcutaneous or intercuta-

* Presented at the regular meeting of the Brooklyn Pediatric Society, January 28, 1914.

neous position the extremities are found to be covered to a more or less degree with an exanthem, whose primary efflorescence represents inflammation of the nodule. Gradually these nodules, which are of blueish red or yellowish red color, rise from the deeper layers of the skin and show small indentations on their surface which become covered with scabs. They last for months and gradually disappear, leaving a somewhat depressed scar. This condition is generally localized on the extremities, on the outer surfaces of the arms, on the backs of the hands and fingers, on the upper surfaces of the feet, on the backs of the ankles and legs and on the ears." (Pfaundler and Schlossmann, Vol. IV, p. 514.)

The case that I present this evening is of this type:

Corinne, J., age 9 years, was admitted to the Home for Consumptives on September 4, 1913. Family history negative. Previous personal history. Measles in infancy. Abscess in the neck two years ago.

Condition on admission. Extensive scars with open sinus on the left side of the neck. Also old scar over the right pectoralis muscle. A small patch of lupus on the left cheek.

Physical examination. Weight, 62 pounds. Well nourished child. Heart negative. Right lung negative. Left lung, occasional fine rales along the lower border of clavicle. Markedly prolonged expiratory sound with exaggerated whispered voice transmission over the greater part of the upper lobe anteriorly.

The patient has improved rapidly since admission. She has gained nine pounds and there is now no evidence of any active tuberculosis in the chest. Her rectal temperature has gone quite regularly from 99 in the morning to 100 in the evening, and since the development of the skin lesions it has run somewhat higher.

About the first of December she began to develop the skin lesions which are shown this evening. In the case history they are described as follows: "Peculiar sluggish lesions on the dorsal surface of the middle phalanx of each finger and the proximal phalanx of the right thumb. No bone tenderness. On January 14th a second Von Pirquet test was given in the routine work of the ward, and a very intense reaction resulted. This suggests the possibility that the tuberculides are due to some form of skin anaphylaxis to tuberculin.

More recently the tuberculides have developed upon the toes and feet and one larger spot upon the leg has ulcerated and shows no tendency to heal. As you will note most of the lesions tend to break down, discharge a necrotic core and then heal over leaving a depressed purple scar, but in some instances this scar tissue is the seat of secondary necrotic spots. The treatment thus far has been with ichthyol, but on the advice of Dr. Potter a 5 per cent. guaiacol ointment is to be tried.

MINUTES OF THE SIXTEENTH ANNUAL MEETING.

The Sixteenth Annual Meeting of the Associated Physicians of Long Island was held Saturday, January 31, 1914, at the Library Building of the Medical Society of Kings in Brooklyn. The President, Doctor Samuel Hendrickson, of Jamaica, was in the chair, and there were present about seventy-five guests and members. As the minutes of the previous meeting had been published in the JOURNAL the reading was dispensed with. The Chairman of the Membership Com-

mittee, Doctor Warren L. Duffield, presented the following names of applicants for admission to the Society:

Proposed by Maurice B. Pearlstein:

Theodore Davis Adlerman, 910 St. Johns Place, Brooklyn, N. Y. U., 1892.

Louis Adlerman, 400 Rockaway Avenue, N. Y. Eclectic, 1894.

Proposed by George F. Little:

John J. Delany, 1114 Avenue O, Univ. and Bell., N. Y., 1909.

Proposed by G. Frank Sammis:

Louis Frederick Licht, 65 Forest Avenue, Cornell, 1903.

Ernest M. Vaughan, 1223 Bushwick Avenue, Cornell, 1906.

Theodore Luther Vosseler, 390a Monroe Street, L. I. C. H., 1905.

Proposed by James Cole Hancock:

Edgar Eginton Stewart, Great Neck Station, P. & S., N. Y., 1906.

Alan Greenleaf Terrell, Riverhead, P. & S., N. Y., 1892.

W. E. Foster, Babylon, N. Y. Hom., 1891.

William Wallace Hadley, Sea Cliff, Buffalo, 1886.

J. Stewart Doubleday, Shelter Island, Univ. Va., 1893.

Proposed by Warren L. Duffield:

Stephen H. Ackerman, 742 Union Street, P. & S., N. Y., 1911.

William Church Griswold, 88 Prospect Park West, Albany, 1897.

Charles F. Tafel, 212 Park Place, L. I. C. H., 1908.

Lewis Walter Pearson, 401 Union Street, Bell., N. Y., 1888.

George William Tong, 429 Third Street, L. I. C. H., 1903.

Carroll L. Nicholas, 232a Putnam Avenue, Cornell, 1904.

Andrew D. Packer, 262 Hicks Street, L. I. C. H., 1907.

The Secretary was instructed by the Society to cast one ballot for the above-named applicants and they were thus duly elected to membership.

The report of the Historical Committee, prepared by the Chairman, William Schroeder, was then read as follows:

REPORT OF THE HISTORICAL COMMITTEE.

The annual report of your Historical Committee is herewith presented. The year numerically has not been equal to the year 1912, and the death rate has been somewhat larger, still we have every reason to be grateful for the work accomplished and the general good feeling that prevails among the members of the Association.

Our first duty is to record the names of those who have been active members and have ended their life work with honor to themselves and credit to the profession of medicine. They are as follows:

Date of Membership.

Date of Death.

1911-1913.....	Keran O'Brien, M.D.....	January 6, 1913
1899-1913.....	Ernest Palmer, M.D.....	January 20, 1913
1912-1913.....	William F. Ganster, M.D.....	February 11, 1913
1899-1913.....	Eugene J. Carolan, M.D.....	March 14, 1913
1909-1913.....	John H. Droge, M.D.....	March 15, 1913
1900-1913.....	William A. Little, M.D.....	February 4, 1913
1906-1913.....	Grant Stanley, M.D.....	March 23, 1913
1898-1913.....	Algernon T. Bristow, A.B., M.D....	March 26, 1913
1899-1902.....	Frank Little, M.D.....	April 14, 1913
1899-1913.....	John R. Stivers, M.D.....	September 18, 1913
1905-1913.....	George Drury, M.D.....	October 20, 1913
1906-1913.....	John D. Brundage, M.D.....	October 22, 1913

An obituary notice of the above-named members has appeared during the year in the LONG ISLAND MEDICAL JOURNAL.

During the year the names of forty-three physicians have been presented for membership, representing the following named universities and colleges:

University of New York.....	1
University of Maryland.....	1
University of Pennsylvania ...	2
Cornell University.....	6
Drake University.....	1
Nashville University.....	1
Vanderbilt University.....	1
Long Island College Hospital..	15
College Physicians and Surgeons, New York.....	7
Albany Medical College.....	1
Bennett Medical College.....	1
Louisville Medical College....	1
Rush Medical College.....	1
Virginia Medical College.....	1
New York Homeopathic Medical College	1
Unknown	2

Total 43

The work of the Historical Committee has been continued during the year, as in former years, and let me again renew my annual reminder for the members to give a little attention to this work, and to those who have not already done so to kindly record upon the blanks sent to them what they wish to have recorded and return them to the committee.

WILLIAM SCHROEDER,

Chairman of the Historical Committee.

Ordered received and filed.

The report of the Committee on Humanics, prepared by the Chairman, Dr. William B. Brinsmade, was read by Dr. H. Beekman Delatour. It follows:

REPORT OF COMMITTEE ON HUMANICS.

The Committee on Humanics begs to report as follows:

During the past year many autopsies have been obtained where the motive could be distinctly traced to the publicity given this subject by your association. Your committee has inspired several articles on the necessity of autopsies in the public prints. The coroners' physicians have been influenced by the sentiment created. A few of the hospital superintendents have fallen into line and have been of great assistance in individual cases. Altogether your committee feels that the field is ready for another sowing of the seed and that the time is ripe for further work along this line; whether it shall be by a definite signed request by as many members as care to go with the movement, or by some other means, must be determined by the next administration of your association. We, therefore, recommend that this Committee on Humanics be continued and become a permanent committee, to be appointed by the President.

Respectfully submitted,

W. B. BRINSMADE, Chairman.

This report was ordered received and its recommendations adopted.

The Committee on Publication then made a report prepared and read by the Chairman, Doctor William H. Ross. This report follows:

REPORT OF THE COMMITTEE ON PUBLICATION.

The Publication Committee reports progress in the affairs of the JOURNAL, both as to quality and finances. For the year 1913 the cost (net) has been \$700. We have spent in the making of the JOURNAL \$2,000 more for 1913 than for 1912. To expend this large amount of money and yet have the net cost \$1,000 less than last year is a showing that may well make us feel that things are going well. Next year it will be self-supporting if the same kind of sustained effort and intensive application is continued. Details as to how this has been done are not usually interesting. The average of mankind is more interested in results than in detailed reports of how they have been obtained. Let no one think, however, that it has been easy. The Editor has been untiring in his efforts. He has done a great deal of work, far more than he has been compensated for in money. The greatest work of man is done when there is no thought of money. This only can explain the effort that he has put forth to give us a good journal. The circulation of the JOURNAL has been increased to the extent of sending it to the members of the Kings County Medical Society who are not members of the Associated Physicians. We have assumed the publication of the *Bulletin*, formerly published by the Kings County Medical Society, and, therefore, there is now only one medical publication in Brooklyn. The special department of the medical book news supplement is under the direction of Mr. Albert T. Huntington. Four supplements of eight pages each have been prepared for and issued with the January, March, August and December numbers of the JOURNAL. Seventy-five books have been received and acknowledged. The publishers prices for these books total \$207.62. For this department Mr. Huntington has been entirely responsible. How well he has done his work is evidenced by his report. For this valuable department we are indebted to the skill and ability of Mr. Huntington. It means much to the JOURNAL and it means much to the library.

We wish to express our thanks to Doctor Frank Overton, of Patchogue, for the many photographs of scenes at our meetings which we have been able to reproduce and which have added much interest to the accounts of these meetings.

Now a word of appeal: If to the work of those directly charged with the responsibility of the JOURNAL, there could be added the active interest of its friends, instead of passive interest, it would take good imagination to predict what the JOURNAL would become. Do you not, all of you, want to see a journal for Brooklyn and Long Island second to no other? "Lest we forget," let the committee remind you again this year that the JOURNAL is the only local outlet for the publication of medical literature for more than three thousand medical men serving professionally more than three million people. There is no sectarianism; every legitimate means contributing to the progress of medicine and the betterment of the profession itself can find in the JOURNAL an outlet for its expression. There has been a continuous upward trend in the affairs of the JOURNAL in quality and finances. It is now almost self-sustaining. It has well passed the experimental stage and is almost a fixture. We want to see it become a great journal, and this is not very far off; not this year, of course, but it can be next year if every one will help. If you want it, just show your interest in whatever practical way you think best. We are not hampered by commercialism; we are independent of any superior authority. We know of no reason why we

may not expect to see the JOURNAL one of the foremost exponents, in this country, of twentieth century medicine.

Respectfully submitted,

WILLIAM H. ROSS,
Chairman of the Publication Committee.

The report was ordered received and filed.

The Secretary reported that fifty new members had been added to the roster during the year. Two of these were Honorary Members, Doctor Cass B. Davenport and the Honorable Michael J. Drummond. He also reported a total membership of 872, of which 10 were honorary and 862 active members. 225 of the latter were from Queens, Nassau and Suffolk Counties, and 637 from Kings County. There were 16 resignations during the year and 10 deaths.

The report of the Secretary was ordered received and filed.

The report of the Treasurer was then read and considering the heavy expenses for the year was so gratifying that the Treasurer, Doctor Edwin S. Moore, was tendered a vote of thanks by the Society. The Treasurer's report was audited by Doctors A. C. Brush and B. Unuf, and was found to be quite correct. It was ordered accepted and filed. The President gave notice that at the June meeting he would move to amend the By-Laws so that the Treasurer should be added to the ex-officio members of the Committee on Publication.

The following resignations were read:

Gus. R. Manning	W. M. Butler	Eliot Bishop
A. W. Jagger	K. F. Junor	H. M. O'Rielly
Morley B. Lewis	O. Joerg	J. R. Taylor

Doctor William Browing moved that these and future resignations be referred to the Board of Directors for final action. Carried.

The report of the Nominating Committee was presented by Dr. Frank T. Delano as follows:

For President, James P. Warbasse, of Brooklyn.

For First Vice-President, Guy H. Turrell, of Smithtown Branch.

For Second Vice-President, Dudley D. Roberts, of Brooklyn.

For Third Vice-President, J. Carl Schmuck, of Lawrence.

For Secretary, James Cole Hancock, of Brooklyn.

For Treasurer, Edwin S. Moore, of Bay Shore.

There being no further nominations from the floor the Secretary was instructed by the Society to cast one ballot for the election of the above, which was done.

The Scientific Session, presided over by Dr. Walter Aikman Sherwood, consisted of a paper by Dr. Edward E. Cornwall, of Brooklyn, entitled, "Practical Points in the Interpretation and Management of Low Blood Pressure," and an interesting discourse by Dr. Fred H. Albee, of Manhattan, upon, "Original Uses of the Bone Graft. A Report of Two Hundred and Twenty-five Cases." This was illustrated by lantern slides.

The dinner at the Hamilton Club was attended by seventy guests and members. It was of unusual excellence and seemed to be thoroughly appreciated. Addresses were made by the retiring President, Dr. Samuel Hendrickson, the in-coming President, Dr. James P. Warbasse, by the Rev. Andrew Magill, of Jamaica, and by Dr. William Francis Campbell, of Brooklyn, President of the Medical Society of the State of New York. A vote of thanks and appreciation was moved by Dr. L. Grant Baldwin to Dr. Fred H. Albee for his able contribution to the program of the afternoon meeting. Dr. Albee replied in a few well-chosen words.

JAMES COLE HANCOCK, Secretary.



EDITORIAL



A LOOK AHEAD.

THE JOURNAL recently called attention to the unpreparedness of the Medical Profession in legislative matters and in a very general way suggested that, instead of trusting to legislative committees serving voluntarily, a paid bureau of information should be established which by frequent bulletins issued to all physicians should keep them informed upon legislative matters. The necessity for better organization in some such way is brought out sharply by the circumstances surrounding the advent of a recent bill to regulate the sale and use of bichloride of mercury, as explained in a letter from Dr. Pabst, printed elsewhere in the JOURNAL. In a general way this bill provided restrictions limiting the general sale of the drug to $7\frac{1}{2}$ grain cubes colored green and practically forbade its use in prescriptions. A hearing on the bill was announced on February 4th, at which there were representatives from the wholesale and retail drug trade representing a variety of organizations officially; *no medical body was officially represented*. About a dozen wide-awake physicians were on hand purely as individuals. Apparently the medical societies had utterly failed to recognize the importance of the bill from any standpoint and trusted to luck that nothing therein contained would interfere with them as individuals. It was a drug trade representative who pointed out that the restrictions on prescriptions would prevent a physician from administering mixed treatment.

The great body of physicians who, united, would exert a tremendous influence on public opinion, seem individually utterly indifferent to the march of events. American physicians have as yet failed to heed such warning signs as the compulsory treatment of free patients enacted in Austria whereby the accident of a physician's residence may place him in a district where his entire income will depend on the pittance allowed him by the State, something like twenty cents for each public visit; to the general insurance bill forced upon the English profession by Mr. Lloyd George, that has split the British Medical Association in two; and to the extremely radical provisions in some parts of France that practically make medical attendance obligatory and leave the question of pay very much in question. Physicians as a class seem to be among those who, having eyes see not, and ears hear not the things that so closely concern their temporal benefit. There are those others, however, who see only too clearly the trend here in America toward social service. Education today is largely in the hands of the State. The water supply is being rapidly placed under State control and it will not be long before all public utilities are also State controlled. Here in New York there is a steady spread in the activities of the Department of Health; in the Police

Department there is an effort toward greater control of the professional work of its surgeons; in the Legislature there is a constant effort to regulate and narrow the privileges of physicians to do and think for themselves. The logical goal of such a trend is State control of medical practice. The time is not far distant when the requirements of a medical education will be such as to exclude all but the particularly fit. The supply will thus be limited and some provision will of necessity have to be made for the treatment of the very poor. The State paid physician will be a necessity. How many physicians have been willing to think even thus far? How many are willing to put aside a few minutes for the common good? How many would be satisfied to accept the limitations of State paid practice? How many are now doing anything to prevent it? It is perfectly true that there are some societies for the consideration of medical economics but they do not seem to have grasped the greatest problem that we have to face. Physicians as a class will delegate these matters to a committee, be satisfied to leave it to the committee, and will howl with indignation when the committee fails to accomplish all it might. It is not enough to burst into indignation and protest at the eleventh hour when legislative probability becomes legislative enactment. It is not enough that here and there a sporadic attempt at organization should attack more or less ineffectually an outwork of the main problem. The entire medical profession of this country must be individually interested and must as individuals be kept in touch with the progress of events, and to that end there must be a central bureau of information that shall keep every one informed and by so doing keep every one interested. It may sound sordid, it may sound commercial, but it is essential and upon it depends the future of medical practice in America. H. G. W.

GET IT STRAIGHT.

THROUGH the courtesy of Dr. Herbert F. Williams, the JOURNAL is enabled to reprint the following bona fide advertisement from the McLean, Texas, *News*:

"GET IT STRAIGHT.

Please get it straight in your noodlums that some of you still owe me old bills, and that all humans need money, and that a doctor is just a human, whether you think so or not. Some people seem to think he is one-half owl and the other half jackass; the owl proclivities making him prefer to be up at night instead of sleeping, and the jack stock he is supposed to possess enabling him to endure all kinds of hardships and live on half feed and hot air promises.

Some people prefer, it seems, to call a doctor at night, when, if they had to go after him, they would not walk a hundred yards for him. It's awfully easy to ooze up to the wall and call a doctor over the phone, then jump back in bed and wait for him to come through the darkness and cold, and then expect him to come in looking pleasant. I want to tell you it's about as easy to practice medicine and always be pleasant as it is to sit long in a Texas red ant bed and look unconcerned.

About 95 per cent. of the night calls are useless, anyhow. If the patient is allowed to wait until morning, and a few home remedies are applied, nine out of ten will not need a physician by morning. People take too bloommin' much medicine anyhow. What some need is to be shot full of hot soap suds with an automatic squirt gun.

Another thing—get it straight—I charge extra for night work, you bet your sox, and I charge extra for work in unusually bad weather in daytime. Night means, when the sun quits blinkin'.

The cost of living and prices in every line of business have advanced during recent years anywhere from one-fourth to double or more, all except the country doctor's fees. Beginning the first of 1914 I shall charge for day calls in town \$2.50 per call, and \$1.00 extra, or \$3.50, for night calls. If I make two, three or a dozen calls on the same day, I make no reduction on charges. It's as much trouble to make one call as another, and if you don't want to pay for extra trips don't belly-ache for me to make them. Grant knows that if you leave it to me I will make as few as possible. Another thing, please get straight, I charge for prescribing over phone. Calls to the country are \$1.00 per mile, one way, except at night, when an extra charge will be made, depending on the distance, weather, etc.

Now, be sure you get this straight: cut it out and paste it in your hat; when you ask me to "fix up" some medicine for yourself or folks, don't ask me what the medicine is worth and think, when you pay for the medicine, that you've paid all. I charge for my services and charge from one dollar up. I am not SELLING medicine, I am PRESCRIBING it, and I'm not dishing it out for nothing. I had very good health before I came here. Moreover, cheap doctors are, as a rule, like all other cheap commodities, not worth a darn.

I charge, and always have, \$15.00 for confinement cases in town and a short distance from town, and after that mileage is added. Extra charges are made for extra time of detention or when forceps are used. Naturally, a doctor expects cash for these cases, for you have nine month's warning in which to dig up the dough.

Now listen, I don't care enough about the practice of medicine to practice just for a job, I want pay for it, and unless you pay, why, I simply don't want your business; and that's not all, you need not send for me if you think I am going to carry your account and troubles indefinitely.

DR. BALLARD."

Selah! Amen! So mote it be! One is strongly tempted not only to paste this in his hat, but also tack it at the head of his bed and say "them's my sentiments." Dr. Ballard has the courage of his convictions and he has placed those convictions squarely, if unconventionally, before the people of McLean. There is a certain picturesqueness about it that commands admiration. The very frankness of the doctor's action will probably go a long ways toward placating the County Medical Society that would wish to discipline him were he to express himself more diplomatically. In all seriousness there is much food for thought in

the rugged, slipshod vernacular; the abuse of the telephone; the unreasonableness of captious patients; the unpaid services; in fact, all of the abuses that have gradually crept into medical practice are forcefully presented and would afford splendid material to moralize upon if Dr. Ballard had not already covered the subject quite convincingly enough.

H. G. W.

VIVISECTION AGAIN.

UNDER date of February 16, a New York daily prints in scare headlines "District Attorney Probes Vivisection"—"Substitute Children for Guinea Pigs in Experiments," and proceeds to devote two entire pages to what it is pleased to call an investigation of charges that children in hospitals controlled by New York City "have been infected by vile blood diseases through practices of inoculation hitherto used on guinea pigs, monkeys and rabbits, or else as the result of carelessness and poor sanitation." It includes several columns of statements from various prominent members of antivivisection societies dealing with the so-called "problem." The impression gained by a cursory reading is that helpless and defenseless children have been made the subjects of animal experimentation and have developed syphilis and other unnamed diseases as a result of indefensible practices on the part of physicians. A more careful reading brings out the fact that children have been discharged from the Riverside Hospital with diseases that they were not known to have when admitted.

From year to year the Antivivisectionists have conducted a campaign for the control of animal experimentation; their purpose at first being a sweeping control, and, as this has failed, a more insidious control by means of investigations to be authorized by the State, but actually conducted by persons to be designated by the various interested societies. A certain New York weekly has carried on a consistent campaign in which it has endeavored to present the Medical Profession in a ridiculous light by cartoons and more or less ironical humor. The Editor of this paper is one of those who has been quoted at length in the recent agitation; his text being, "The Harmfulness of Serum Injections," a subject on which his occupation and technical training, of course, qualify him to speak with authority. In point of fact much of the ammunition leveled against vivisection is pure deduction based upon imperfect knowledge and hysterical exaggeration. Much is morbid sentimentality emanating from persons whose lack of useful occupation and excessive leisure incite them to meddlesomeness. Observers of this type seem prone to accept with enthusiasm baseless assertions that physicians are inhuman and callous enough to cause suffering to induce disease; in short, to level themselves to primitive savagery under the cloak of the advancement of science by experiment. The utter folly of such an unreasonable belief is too apparent to require refutation. Laying aside every other feature of the question under discussion and taking for granted that some children have been infected with syphilis and gonorrhœa while in hospitals, it is reasonable to ask what bearing this may have on the vivisection question? It must first be established that these children entered the hospital in perfect health and that the infection

occurred subsequent to their admission; then it must be shown that the disease was the result of deliberate or unintentional carelessness on the part of the physicians and nurses responsible for their care before any charge may be laid against the hospital authorities. As a matter of fact it may be shown that many children upon admission to a hospital have already been infected—such cases are only too frequent in private practice—and are a source of danger to those about them. Hospital authorities as a rule are alive to this condition and are striving to minimize it, and it may be confidently stated that an investigation of this question will prove that such cases of infection as occur in hospitals happen in spite of reasonable care, and further, that the physicians responsible for the care of such children would be the first to welcome a plan that could be depended upon to prevent the communication of these two diseases. The work of the American Society of Moral and Sanitary Prophylaxis is warrant for this assertion.

As to the use of such preparations as Noguchi's Luetin Test, it would be well for those who raise the outcry to learn what it is and what it does before lashing themselves into fury over it. It reminds one of those days when just such people burned witches for just such attempts to do good. The intemperate utterance and broadcast publication of such articles as have been quoted can have but one result, to excite prejudice, to hamper progress and to bring about a relapse into the condition of medievalism that seems to be the goal for which the Antivivisectionists are striving.

H. G. W.

HENRY CUSHMAN TURNER, M.D.

At a meeting of the Medical Board of the Norwegian Deaconesses' Home and Hospital held on February 4, 1914, the following resolutions were adopted:

WHEREAS, We have learned with regret of the death of Henry Cushman Turner, M.D., Founder and Dean of the Norwegian Deaconesses' Home and Hospital Staff.

Resolved, That the Medical Board record the sentiment of its members, especially those who worked with him in his hospital service, that a worthy, conscientious, painstaking, cultured physician has passed away. Be it further

Resolved, That a copy of these resolutions be sent to his family, the medical press, appear in the "Yearly Report" and be entered in the minutes.

ROBERT E. COUGHLIN, M.D.,

Committee Chairman.

CORRESPONDENCE.

The Editor of LONG ISLAND MEDICAL JOURNAL.

DEAR DOCTOR:

The bill regulating the sale of bichloride of mercury has been introduced in the N. Y. State Legislature, and was given a hearing before the Senate Codes Committee on February 4, 1914. How many physicians know what a hearing of this kind means to them? It means that an opportunity is offered to those who oppose a bill to voice their objections and suggest amendments, and that those who favor the measure should be represented in order that their interests be protected, and the bill defended against unjust attacks by the opposition. If this opportunity is neglected, it is no time to complain after a measure has become a law, and since physicians usually begin to protest about the time a law goes into effect, it is not to be wondered at when the commercial world smiles at the medical man's lack of knowledge regarding the simplest rules of legislation.

For the past year I have urged the necessity of a law regulating the sale and manufacture of bichloride of mercury and for that reason I went to Albany and addressed the Senate Committee. Not one medical society or association was officially represented, and how indignant they would have been if the bill had passed in its original form. I found that no provision had been made to allow for the dispensing of bichloride when intended for internal administration. One can imagine the storm of protest that would have arisen when physicians found they could no longer prescribe the popular "Mixed Treatment," or tablets containing bichloride in medicinal doses; but the time for objections would have passed.

The senators who draft a bill of this kind are laymen, and when a measure relating to the medical profession is introduced, they naturally expect that physicians will be present at the hearing to suggest the necessary amendments. The N. Y. State Pharmaceutical Association was ably represented, also the National Druggists' Association, but not a single medical organization. This places the profession in a bad light before our own legislators. Senator Blauvelt, who introduced the bill, approved of the amendments, and the measure will no doubt become a law, which will go into effect July 1, 1914. I absolutely approve of a paid legislative committee for every medical association, but I prefer none at all rather than one which does not perform its full duty.

Yours very truly,

CHARLES F. PABST, M.D.

The success of the JOURNAL depends in no small measure upon its advertisers. Readers of the JOURNAL should not forget this in bestowing their patronage.



Society Transactions



TRANSACTIONS OF THE BROOKLYN SURGICAL SOCIETY.

Regular Meeting of Thursday, October 21, 1913.

The President, RUSSELL S. FOWLER, M.D., in the Chair.

Traumatic Injury to Forearm with Destruction of Brachial Artery. Patient.

Reported by C. H. Watson, M.D.

In April, 1910, the patient while working in a pattern shop, caught the right coat sleeve in the mechanism of a planing machine and the arm was drawn down in an extended position so that it lay on top of the board carrier with the planer. The circular knife carrier met the arm about the bend of the elbow and traveled up as it entered the tissue, the result being that the lower portion of the belly of the biceps, the brachial and the upper inch and a half of the two secondary arteries of the forearm were cut out. The vessel was controlled with a tourniquet first and on being brought into the hospital was subsequently ligated.

The interesting part of the case was the fact that we got an arm which is useful. At first there was no brachial pulse at all, the supply being carried on by means of the superior profunda and the anastomosing vessels of the outer secondary supply of the forearm.

One of the remarkable things about the case is the fact that the gentleman was 69 years of age when the injury happened and the healing process occupied about six months; that is, it was six months before he went to work. We had difficulty in getting granulation and subsequent skin formation over the surface and the thing I found most valuable at that time was a dressing saturated with boiled olive oil. That was about what he had all the time. I tried a number of the unguentulated preparations for raw surfaces, but they did not apparently accomplish anything. The skin was very reluctant indeed and the boiled olive oil was apparently the only thing that worked.

He has now a slight radial pulse. He has a paralysis of flexors of the index finger. In other words, the injury destroyed a portion of his median supply that runs to the flexor sublimis and flexor profundus digitorum muscles. He has an arm which is perfectly useful. He is able to go to work every day as a pattern-maker and makes as much money as he did before.

Ruptured Ectopic Gestation Simulating Gastric Ulcer.

Reported by C. H. Watson, M.D.

The second case I have to report is one of ruptured ectopic gestation simulating gastric ulcer. The two latter cases are reported chiefly because they were evidences of possibly a faulty diagnosis or inability to discern the condition that was present.

The patient in this case was a school girl, 17 years of age. On February 14th last, I was called to see her at nine o'clock in the morning. She was moving restlessly about in bed and complaining of severe pain in the epigastrium extending around the right side to a point beneath the right scapula. The face was pale, the mucous membranes blanched and covered with a pronounced cold perspiration. She said that she had been seized with this pain about two o'clock in the morning and at the initial seizure had fallen to the floor and it had been constant since then. At that time she appeared to lose consciousness for a few moments. The patient had not vomited. The bowels had been regular the night before. She had not urinated since the pain began. The stools were of normal color and consistency.

Physical Examination.—Pulse, 105; respiration, 22; temperature, normal (98.3). There is an area of extreme tenderness over the epigastrium on deep vigorous pressure; slight discomfort elicited over McBurney's point; cursory pressure over the lower abdomen revealed no tenderness. A diagnosis was made of ruptured gastric or duodenal ulcer and that was confirmed by the consultant who had seen the patient.

On being removed to the hospital (we must remember she was a school girl) the fact of the momentous proceedings, evidently under way, moved her to give us this history, namely, that she was married in December, 1912, secretly, had menstruated in January very scantily and the same had occurred at her February period. To aid matters, the patient said she had taken some medicine four days before the present attack. That changed the aspect of the entire case and vaginal examination revealed a mass on the right side, in front of the broad ligament, and operation revealed a ruptured ectopic pregnancy.

The point which makes me wonder was the fact that I got no tenderness in the lower abdominal segment and her entire pain seemed centered in the epigastrium. From my small experience that was rather unusual, but I presume that other members of the society are accustomed to seeing ectopic gestations giving pain in the epigastrium. That was the first instance in which I had seen that occur.

Cerebellar Hemorrhage in a Girl of 17 Years.

Reported by C. H. Watson, M.D.

The family history is rather important: Father died of Bright's disease as a young man (the age I could not find out). Mother died of apoplexy two years before. Otherwise it was negative.

Previous Personal History.—Patient had measles, tonsillitis frequently, with bad throat colds. In July of last year; that is, July, 1912; she had a fainting fit, according to the history, and was unconscious for a day; was well in three weeks following. No diagnosis was made, or at least, none was to be obtained. She had an attack of influenza in December, 1912, and at that time her menstruation was delayed two or three days. In January, 1913, she had an attack of persistent tonsillitis, lasting several days.

Present History.—On February 14th, at three o'clock in the afternoon, while working in the laboratory (she was a school girl), after a normal dinner, which, according to the account of her classmates, she seemed to enjoy, she complained of severe occipital headache (she said she could not bear it) and at that time spoke to her instructor who afterwards said that the girl seemed to want to lean against the table or wall. She went down one flight of stairs and walked to the instructor's office and at that time made a joking remark in comparing their respective sizes. The distance from the elevator to the office was about 50 feet, which distance she traversed easily with some slight support from the instructor. Immediately upon arrival she apparently fainted and I found her in the following condition: Face flushed, extremities cold, reflexes all present. She would rouse on being spoken to loudly and then would apparently become comatose. After being roused, the eyelids opened and the eyes seemed to be in a double conjugate strabismic position toward the left. They would then come to the median position. On recession into coma the strabismus recurred. She responded to questions, but after a considerable interval. Her answers were all in a monotone, devoid of any expression and generally monosyllabic. During the time that she was in the instructor's office she had three attacks of vomiting, which seemed simply regurgitant and not projectile. The face became somewhat cyanotic as time advanced and in a half hour after the fainting fit the respiration became Cheyne-Stokes in character. I had the patient removed to the hospital and during the removal she stopped breathing. Breathing was restored by using Laborde's method. The temperature on arrival was 96; respiration, 14, and pulse, 108. Further examination revealed greatly exaggerated patellar reflexes; also the ulnar reflexes. She had a marked Babinski. Blood pressure over 200. This was not noted correctly; it was between 200 and 210. The girl was in such apparently bad shape that haste interfered with accuracy. A diagnosis was made of either a profound toxemia or a hemorrhage into the ventricles. A low, irritating enema was given twice. The lower bowel was found packed with feces. Urine examination shows the urine to be heavily laden with indican and that was behind the toxemia diagnosis. She received stimulation, colonic irrigation of 10 gallons preceded by two minims of croton oil and the last of the irrigation showed the croton oil.

During the night the patient appeared better, with a temperature at midnight of 102; pulse, 96; respiration, 24. At intervals the patient tossed her arms and legs about very wildly. There was no return to consciousness after leaving the institute. Blood pressure fell to 180, then to 140 and about four o'clock respiration became Cheyne-Stokes, pulmonary edema supervened and the patient died about six A. M.

Autopsy revealed an old black clot, organized, about the size of a button, in the left lobe of the cerebellum, and fluid blood under the tissues in all the ventricles.

I made a point of getting the blood pressure of that girl at the institute. She had a practically normal blood pressure for a girl of her age and size. She was a girl who was large, about five feet, eight inches, and weighed close to 160 pounds. Her blood pressure in 1911, when she entered the institute was: horizontal, 112; vertical, 108, and in 1912 it was 110 in both positions. In 1913, blood pressure, taken before the Christmas holidays, was: horizontal pressure, 104; vertical pressure, 94. There is no record of an increased blood pressure, so far as we could find, until this attack occurred which ruptured her cortical vessel.

Abscess of the Liver. Patient.

Reported by John Horni, M.D.

Complaint.—"Stomach trouble."

Present History.—About eight months ago patient was seized with a severe frontal headache which lasted two days, and a dysentery. A slight yellowish tint of the skin was noticed on the second day, and this faint jaundice was present about one month. During this time patient had a feeling of depression and lassitude, and although he was not able to work was not sick enough to remain in bed. Two months passed with this same feeling of languor and lassitude. All this time he was under a doctor's care and treated for "stomach trouble." Not once did he vomit or suffer vain, only a sense of heaviness and dizziness after meals. At the end of the third month he felt much better and resumed his work as shipping clerk for one month, at the end of which time he had to quit on account of "weakness in knees," and general malaise. During the following four months he stayed at home in bed, part of the time "moping around," preferring to be alone, and in a state of gloomy depression most of the time. The feeling of heaviness and dizziness after meals grew constant and he would usually lie down for a while after meals. His appetite continued good and bowels were regular. Says he noticed a yellowish tinge to his skin, at times, which would disappear for a few days and then return again. He also noticed urine highly colored at times. During the day he often felt "chilly," but never a distinct chill. Sometimes in breathing he would feel a "catching" pain in the region of liver, but pain would soon disappear—no cough.

One week before coming to the hospital he had a severe pain in the right side, about costal margin, near the nipple line which radiated to back and then upwards to right shoulder. He had several paroxysmal attacks of pain in this region during that week, the attacks lasting five to ten minutes and then gradually abating, the pain being aggravated on respiration. During this week he did not vomit, have headache or chill, but felt weaker and noticed the hue of jaundice deepening slightly. Says his abdomen was not tender; felt a very slight pain high upon the right side when doctor pressed there. At no time during his illness was there much pain on pressure over his abdomen.

Patient rode in carriage to hospital and was able to walk some, although he felt very weak and exhausted. Does not think he lost very much weight during entire sickness.

Past History.—Always had good health previously. Does not remember any of the diseases of childhood. Never had typhoid or pneumonia. No history of cough, night sweats, edema, gastric or urinary disturbances. Says he was never sick before. Has always been rather lean.

Family History.—Father died of painter's colic; mother in good health; sister and one brother in good health. One uncle died of tuberculosis. No history of rheumatism or cancer.

Habits.—Denies drink in any form; smokes moderately. Never took much exercise.

Venereal.—Denied.

Rib Resected.—December 15, 1912.

Liver operation June 27, 1912; left hospital scaling 92 pounds.

Present weight 146 pounds.

At the conclusion of his report of the above case, Dr. Horni stated:—"On admission the liver was about two hands breadth below the free border of the ribs. He left the hospital and was in very good condition for six months. I was then called to see him in December and resected a rib for an empyema involving this right pleural cavity. This discharge was mixed with bile.

Dr. ROGER DURHAM, in opening the discussion, said:—"Did I understand Dr. Horni to say that there was an operation for empyema?"

Dr. JOHN HORNI, in closing the discussion, said:—"Yes; in six months there was an operation for empyema, following the operation on the liver."

Cystic Goiter. Patient.*Reported by John Horni, M.D.*

This is a case of cystic goiter extending well up to the neck. The patient is a married woman with three children. Past history is negative.

Present History.—About two years ago she complained of palpitation of the heart and dizziness and feet swollen over the shoe-tops. She noticed an enlargement of the gland. At the same time she became anemic and very irritable and would pass into a state of melancholy. The only symptom which brought her to operation was that of pressure. She had difficulty in swallowing and breathing and had choking spells, but up to this time and until she submitted to operation the heart action was controlled very well with thyroid extract and iodid of potassium, but the anemia did not improve, but after the cystic goiter was removed all these symptoms disappeared, the anemia improved, breathing improved and she feels very much better.

The thing which I fail to comprehend is how a cystic goiter will improve with thyroid extract and iodid of potassium, and it is for that very reason I present the case. If any gentleman knows anything about this feature I would like to hear of it.

Angioma of Lip Removed by Carbon Dioxide Snow. Patient.*Reported by J. H. Long, M.D.*

C. K. Female. Age two. Was born with a growth on the right extremity of lower lip which has been growing rapidly the last few weeks. She was admitted from the dispensary to the first surgical service of The Brooklyn Hospital, July 6, 1913. Examination showed a soft blood-filled growth the size of a cherry on the right side of the lower lip, underlying the mucous membrane.

July 9, 1913, this growth was pressed between two pieces of carbon dioxide snow and frozen for one-half minute. This treatment was followed by considerable oedema of the lip and the formation of a scab. The oedema gradually subsided and the scab fell off. The growth was considerably reduced, but still present. August 1st, the treatment was repeated. August 27th, the patient was discharged from the hospital with the lip still swollen. At the present time there is a small area of induration at the site of the growth, which will, I think, gradually disappear. There is no deformity of the lip.

Dr. R. W. WESTBROOK, in opening the discussion, said:—"I would like to say, Mr. President, that I think that is a very pretty result. I saw the case when it was in the hospital and I was wondering how it would come out. It came out better than I thought it would."

Dr. R. P. SULLIVAN, in discussion, said:—"I would like to ask Dr. Long if he thinks it necessary to apply the snow on both sides, externally and internally."

Dr. J. H. LONG, in discussion, said:—"I did not go on the skin, but on either side of the mass, which was as large as a cherry, and in order to get it perfectly frozen I took it between two sticks of snow to get pressure and counter-pressure."

Dr. J. C. KENNEDY, in discussion, said:—"Some three or four years ago I presented, at a meeting of this society, a somewhat older patient with an angioma of the right lip, extending back into the mucous membrane of the mouth, about the size of a hickory nut.

"I clamped this mass, including some of the vessels that reached back into the mouth, with an ordinary Boleman forceps, and applied the Pasquelin cautery, burning down the tissues, leaving, however, a well-cooked base to avoid hemorrhage. After ten or twelve days the eschar fell off, leaving a very smooth surface beneath. I was convinced that this child was cured, but six months after the trouble recurred and the parents failed to do anything for it until last week, when they brought it to my office and I found that the lip was swollen and the mouth blue, and that the child was in about the same condition it was about four years ago.

"Now, it is a question whether or not Dr. Long's patient is cured. He may have the same trouble that I found with my case; for in this, the condition is about the same as it was four years ago, and I thought I had the patient cured."

Dr. J. D. SULLIVAN, in discussion, said:—"I would like to ask why the doctor used the carbon dioxide snow. Why did he not excise it? Isn't it more simple? Isn't it more complete? I have treated all my cases by excision with good results."

Dr. LONG, in discussion, said:—"I heard about the carbon dioxide snow.

I thought I would see if I could destroy the growth without getting a scar or contraction. After the first application, after the reaction, it looked as though we did accomplish something and then I tried it again to see if we could get a better result than by excision, because it would have been necessary to go fairly deep and there would be quite a piece taken out of the lip."

DR. J. D. SULLIVAN, in discussion, said:—"If this condition does recur you will excise it, won't you?"

DR. J. H. LONG, in closing the discussion, said:—"I expect the scar to soften still more. If that returns I suppose I will excise it the next time."

Obstruction of the Pylorus. Gastro-enterostomy. Patient. Radiographs.

Reported by J. H. Long, M.D.

F. B. Female, age 40, colored.

Previous History.—Eye trouble (syphilitic iritis) one year ago, ulcers on both legs at various times. Menses ceased at beginning of present trouble.

Present History.—January 4, 1913, for eight weeks has had sour stomach and belches sour fluid and gas, gnawing pain in epigastrium, appetite is fair, but all food is vomited. She has lost much weight and is very weak. No previous stomach trouble of any kind.

Physical Examination.—Skin dry and harsh, very emaciated, pupils irregular, left pupil fixed, tongue has an hemangioma (congenital) on left side and short frenum which interferes with speech. There are two partly healed syphilitic ulcers on the right leg. The abdomen is flat and retracted, negative on palpation. Heart and lungs normal. Urine normal. Blood examination: Hemoglobin, 55 per cent.; red cells, 4,680,000; white cells, 11,400; polymorphonuclear neutrophils, 73 per cent.; large lymphocytes, 16 per cent.; small lymphocytes, 10 per cent.; eosinophiles, 1 per cent. Poikilocytosis and polychromatophilia. Wassermann reaction positive. Stools negative for blood.

Gastric contents: Total acid, 70; free acid, 20; combined, 50; free hydrochloric acid, 25. A raisin meal was nearly all recovered in 13 hours.

This patient was so weak and emaciated and her tissues were so dehydrated that I decided to get some nourishment and fluids into her before operating to relieve the pyloric obstruction. Nothing given by mouth was retained. She was given rectal feedings and Murphy drip for eight days, when it seemed that her condition was as good as it was likely to become.

I thought that she needed prompt relief of her obstruction, but that she would not survive much surgery. It seemed to me that a gastro-enterostomy with a Murphy button could be quickly done and would immediately permit the passage of fluids; therefore, on January 13th I opened the abdomen through a left rectus incision. The pylorus was completely obstructed at the site of the pyloric sphincter. There were no adhesions and no areas of induration. Palpation of the pyloric end of the stomach appeared to reveal a rather large soft mass inside. I left this for future investigation and did a posterior gastro-enterostomy with a largest sized, round Murphy button. She recovered with so little shock or disturbance that I was sorry afterwards that I had not done the operation without the button and made a larger opening. On the second day and thereafter all fluids given by mouth were retained. The radiograph shows the position of the button.

April 9th, the patient insisted that she could feel the growth in her stomach and she wanted it cut out. A radiograph taken the day before failed to show the button, so I believed that it had been passed. (She went home three weeks after her first operation and had eaten everything she wanted.) I considered her in good condition for the pylorotomy, so opened the abdomen through the right rectus and found no signs of the intrapyloric growth which I thought I had palpated at the first operation, but did feel the button moving about freely in the stomach. I incised the anterior wall of the stomach and after considerable trouble removed the button from the region of the fundus; about 2 oz. of the bismuth meal, which had been taken the previous day, were still present. The gastro-enterostomy opening would admit the tip of my index finger. The pylorus was still completely obstructed. The incision in the wall of the stomach, which was near the pylorus, was closed and folded in, thus more completely causing the closure of the pylorus. Recovery was uneventful. On April 23d salvarsan, .06 gr., was given intravenously because of the positive Wassermann. September 22d, the patient feels perfectly well and weighs as much as at any time in her life. Radiographs taken by Dr. Williams show bismuth passing through the small gastro-enterostomy opening within five minutes after ingestion and none leaving by the pylorus. Forty-five minutes later, they show considerable diminution of the shadow in the stomach.

This patient has a completely obstructed pylorus and a small gastro-enterostomy opening, which did not empty the stomach of a bismuth meal within twenty-four hours, while she was kept in bed, but has excellent digestion, as shown by her freedom from symptoms and remarkable gain in weight, although the salvarsan may be partly responsible for the latter.

DR. J. B. BOGART, in opening the discussion, said:—"Can you tell us anything about the treatment of this case after the operation, especially as to the Wassermann?"

DR. J. H. LONG, in discussion, said:—"She had salvarsan."

DR. J. B. BOGART, in discussion, said:—"You found a constriction of the pylorus when you operated the second time, did you not?"

DR. J. H. LONG, in discussion, said:—"Yes. The constriction was there the first time, but it was not an ulceration. There was no induration around it whatever. It was simply a tight ring around the pyloric muscle. There were no adhesions around it."

DR. ROYALE H. FOWLER, in discussion, said:—"I would like to ask Dr. Long where the site of the stricture was? Was it at the physiological junction of the pylorus, where a natural stricture would occur?"

DR. J. H. LONG, in discussion, said:—"It was at the point where you look for it; at the site of the pyloric vein."

DR. ROYALE H. FOWLER, in discussion, said:—"It was between the pylorus and duodenum, then?"

DR. J. H. LONG, in discussion, said:—"Yes."

DR. J. C. KENNEDY, in discussion, said:—"Dr. Long states that he was sorry he did not do a more extensive operation and make a larger opening.

"The small opening, from the history that has been given of the patient, answers every purpose. The patient is doing well, feeling well and gaining in flesh. What more does she need? I have had some experience with the 'Murphy button' in times gone by.

"I had one patient on whom I did a gastro-enterostomy, for gastric cancer, with a Murphy button. This patient took three meals a day and enjoyed health and comfort and died two years later of an intercurrent disease. What more could be desired, as far as the gastric opening was concerned? What is the advantage of a large opening when a small one answers the purpose? When Murphy invented his button he never intended that the opening should be large. Murphy still does this operation, not always, but frequently, and thinks well of it, and I am sure a great many of us also think well of it. I am very glad to hear this case explained as the doctor has explained it. He had an opportunity of opening a stomach and examining a Murphy button opening and found it just large enough to pass the tip of his finger into it. It is astonishing how so small an opening will do the work that this opening is doing; but since it does the work it brings up the very important question as to whether the larger openings that we make with suture through the stomach are really necessary."

DR. R. W. WESTBROOK, in discussion, said:—"I have had similar experiences to that of Dr. Kennedy in the old times, but they were with cancer cases, with complete or nearly complete obstruction of the pylorus, and the results were extremely satisfactory. I remember several cases that did extremely well, especially when we did the no-loop operation, which I did before I read about it, and found that it worked very well indeed. Murphy does not advocate the use of the button shown for gastro-enterostomy. It never was intended for that, at least. It was intended, of course, for entero-enterostomy, and when Murphy uses his button for gastro-enterostomy he always uses an elongated button, which gives a very much larger opening; and in operations for ulcer and other conditions where there is a partial obstruction only at the pylorus, a simple small Murphy button opening has been shown again and again to contract unduly and defeat the purpose of its use."

DR. R. P. SULLIVAN, in discussion, said:—"I think the success in Doctor Long's case simply means this—that the anastomosis is in a correct relation to the incisure of the stomach, and that he has preserved the grinding function of the antrum. The skiagrams seem to demonstrate these facts."

DR. J. H. LONG, in closing the discussion, said:—"In that gastro-enterostomy case Dr. Sullivan suggests that the button is in the right place. I don't want to make things any worse than they are, but from the fact that when I opened the stomach the second time a part of the bismuth meal taken 30 hours before was still there, it does not seem to me that it was in the best place to drain the stomach. The antrum was pretty well collapsed. That was where I made my incision. The X-ray plate shows that the bismuth doesn't go down to a

point. The shadow is cut off pretty straight. I think there is a partial obliteration about the infolding. I do not regret now that the opening is small, but when I put my finger in at the second operation I did not think that it was going to last long. That was when I regretted small size of the opening."

A Case of Bilateral Nephrolithiasis with Recurrence after Pyelolithotomy. Radiographs.

Reported by J. H. Long, M.D.

M. S. White. Married. Age 29, seen in consultation June 12, 1912.

Previous History.—One miscarriage, three living children, youngest 16 months. Appendix removed in 1906. In 1908 had right kidney anchored, because it was thought to be responsible for attacks of abdominal pain. The attacks have continued and are increasing in frequency and severity, one every two weeks; they last one or two days.

Present History.—Is having one of the attacks. Pain severe in back and abdomen, shooting down on left side to vulva, tender in both lumbar regions and right iliac fossa. The right kidney is palpable below the costal margin. It is fixed. Temperature, 99; pulse, 120. It is evident that she is suffering severely. Referred to The Brooklyn Hospital. The laboratory reports were: Urine, 1,013; albumin trace, many pus cells. Blood, hemoglobin, 72 per cent.; red cells, 4,300,000; white cells, 10,000; polymorphonuclears, 53 per cent.; large lymphocytes, 4 per cent.; small lymphocytes, 43 per cent. Radiographs taken by Dr. Eastmond show that the sigmoid is fixed in the right iliac fossa and that there is a good sized renal calculus in each kidney.

June 22d. I cut down on the right kidney. The capsule was so adherent to the surrounding tissue that I was inside before I recognized it. It was stripped back and the kidney incised in Broedel's line, and the calculus removed. The wound in the kidney was then closed with the usual through and through sutures, excepting that the capsule was not included. The lumbar wound was closed with drainage. There was a good deal of hemorrhage during the operation. That night the pulse was steadily increasing and the dressing saturated with blood; catheterized specimen consisted of almost pure blood. She was taken to the operating room, the lumbar wound opened and the kidney lifted out on the loin, then iodoform yard lengths were packed tightly under it anteriorly and posteriorly, which held it elevated, then the sutures in the kidney were removed, the two halves separated and the pelvis packed tightly with iodoform gauze. These controlled the hemorrhage. Outer dressings were then applied. At the subsequent dressings the pack in the kidney substance was first removed and later the packing underneath. The kidney and lumbar wounds eventually healed without a sinus and ureteral catheterization one year later showed good quantities of nearly normal urine being secreted by this kidney. The day following these operations the hemoglobin was 43 per cent.

August 19, 1912, the calculus in left kidney was removed through an incision in the pelvis. Recovery was uneventful. There was no sinus.

September 14th. She left the hospital. The urine report was 1,014, acid, albumin present, few pus cells. Blood: hemoglobin, 70 per cent.; red cells, 4,800,000.

June 22, 1913, she came to my office and gave the following history: After leaving the hospital she had been perfectly well, and gained 30 pounds in weight, until five weeks ago, since then she has had two attacks of severe pain in left lumbar region accompanied by vomiting. She is now having the third attack which has lasted for three days. The left kidney is enlarged and very tender. She was sent to the hospital and the following information obtained. Temperature, 102.3; pulse, 124. Urine: 1,015, neutral, cloudy, albumin abundant, pus and a few round epithelial cells, colon bacilli present. Blood: White cells, 17,200; polymorphonuclears, 88 per cent.; large lymphocytes, 8 per cent.; small lymphocytes, 4 per cent. Cystoscopic examination showed granulations around right ureteral orifice, urine escaping, the left ureter was catheterized and only 5 c. c. of urine collected in two hours. Phenolsulphonethalpine test showed color in six minutes and only 10 per cent. an hour for three hours. Radiograph, by Dr. Eastmond, showed large branching calculus in left kidney. She was kept in bed and given hexamethylenamine and colon bacillus vaccine until the acute inflammatory symptoms subsided.

July 17, 1913. Nephrolithotomy was done and same difficulty as previously experienced with the right kidney was encountered—i. e., inability to keep outside the capsule. The pelvis was not constricted. In introducing the through and through sutures, this time, I took care to take a bite in the capsule on both sides with each stitch and had no post-operative hemorrhage.

Convalescence was complicated by the infection which was present in the kidney before operation, and a sinus persisted for several weeks.

Present Condition.—There is still some left-sided pyelonephritis which seems to be subsiding, and phosphates persist in the urine in diminishing quantities.

A Case of Sinus Following Application and Removal of Lane Plate. Radiograph.

Reported by J. H. Long, M.D.

J. C. Ma'le. Age 22. May 6, 1912, the right humerus was fractured by an exploding gas pipe; one month later a Lane plate was applied. The wound suppurated for ten weeks when the plate was removed.

November 25, 1912, the patient visited The Brooklyn Hospital Dispensary and was referred to the hospital. Examination revealed the following condition: There was a rather large callus, more prominent posteriorly, at about the middle of the right arm. In the middle of the scar, on the outer side of the arm, was a sinus about one inch deep. At the bottom of this the probe touched rough bone. Union was firm. The X-ray plate showed that there had been an oblique fracture with a large callus. The opening of the sinus was enlarged and some small pieces of dead bone removed with the curette.

On February 5, 1913, the condition of the arm was the same as when first seen on November 25th. The sinus persisted. He complained of increasing pain on radial side of the hand. An incision was begun above the external condyle at the inner edge of the supinator longus, and musculospiral nerve was easily located and followed upward. It was overlying, but not imbedded in the prominent posterior portion of the callus. It was picked up and displaced inward around the prominence which relieved the tension. The outer portion of the callus was chiseled off; this revealed the following condition: In the middle of the callus, in the fracture line, was a cavity filled with granulation tissue. There were two canals, one from above and behind, the other from below and in front, entering this cavity, each surrounding a process of periosteum and fascia from the upper and lower fragments respectively. These processes were free in the main cavity, lying in the granulation tissue. The top of the callus down to these canals was chiselled off, the strips of periosteum and fascia removed, the granulation tissue curetted out, the medullary cavity opened above and below, and the bone cavity packed with iodoform gauze. The wound was sutured up to the point of emergence of the packing and healed by primary union. A few weeks later the sinus was completely closed and the pain on the radial side of the hand had disappeared. The patient is now working and has good use of his arm.

DR. J. B. BOGART, in opening the discussion, said:—"I have no brief to plead for the Kings County. I did not introduce the plate. I did take it out, however, and when I came to inquire for the patient I contented myself with simply removing the plate, as there was a sinus and there seemed to be some union taking place, so I thought I would not take a chance of breaking it up by doing any curetting at that time and I removed the plate, and I am very much surprised to find that the patient disappeared, as they usually do at the Kings County, even when you treat them as conservatively as I did this man. However, I can show Dr. Long a later plate of his case. I can assure him that the anatomical and function result is perfect. Just how the tissue became engaged between the ends of the bone I do not know. I do know, however, that suppuration occurred early after the operation and that it was very free; that on primary dressing the wound was found to be broken down and there was a very free discharge of pus when the sutures were removed. That is a very interesting observation that he makes, that these cases in which, after what seems to be a sufficient operation, the disease seems to continue. I think one of the most interesting observations in the case is that in spite of the free suppuration and loosening of the plate (so that when it came to my hands it was entirely loose and I simply had to take it out) was that we got a good anatomical and a good functional result. Of course, it cannot be said to be ideal for a wound, after a plate has been introduced, to suppurate primarily, or that the plate should be required to be removed on account of infection, but we must take into account the fact that the position of the fragments is good. Probably that was obtained by the use of the plate and although he lost some time, he finally got a good result."

A Case of Jackson's Membrane and Mobile Cecum.

Reported by J. H. Long, M.D.

G. G. Male. Age 29.

Previous History.—Irrelevant, except as follows: Always constipated, took cathartics regularly. November 25, 1909, had an attack of abdominal pain

which was diagnosed by his physician "appendicitis," but his description of the attack is not typical for acute appendicitis, as it lasted two days and he was not confined to bed. He has had two similar attacks since.

Present History.—May 1, 1913, began to have steady pain, cramps and general discomfort in the right iliac region, moderate in severity, increased by jolting, which have persisted to the present time, that is, two weeks. He is now very much worried about his condition.

Examination.—May 15, 1913, highly neurotic, spare young man. Heart and lungs normal. Urine normal. Abdomen: Right external inguinal ring admitted the tip of index finger and there was a slight impulse on coughing. Unmistakable superficial and deep tenderness over McBurney's point.

Diagnosis.—Chronic appendicitis, possibly Lane's kink or Jackson's membrane. Operation recommended and accepted.

May 19, 1913, operation of first surgical service at The Brooklyn Hospital. The abdomen was opened by the Kammerer incision. The cecum was in the pelvis, it was easily brought up and laid on the abdominal wall. It was much dilated. The appendix was free and slightly clubbed at its tip; there was a fold of parietal peritoneum reflected about one-third of the way up the meso-appendix. There was a well-developed peritoneal sheet which took its origin from the parietal peritoneum near its reflection to the colon, then divided into three narrower sheets which were attached to the internal and anterior longitudinal bands of the ascending colon and the peritoneal surface between them, from the cecum to the hepatic flexure. The underlying colon was contracted. The appendix was removed and the membrane divided. The cecum immediately contracted and the colon dilated, giving an excellent demonstration of the mechanical effects of the membrane. The cecum was anchored to the lateral abdominal wall. The abdomen was closed by overlapping the rectus fascia.

Histological examination of the appendix revealed chronic infiltration of the muscular coat.

Three months later the patient reported that his bowels moved daily without laxatives and that he felt perfectly well.

DR. H. F. GRAHAM, in opening the discussion said:—"This is a mighty interesting subject. All of us have been seeing these membranes at the operating table and they have been noted as an interesting observation, but they have been passed on without much thought. It was not until Jackson's article came out in the March number of the *Annals of Surgery* that it seemed to me that I could make a diagnosis in these cases, although he had written of them much earlier. About two days after the article was published I had a case come into my office and because the subject was fresh in my mind I made a diagnosis in this case of either Jackson's membrane or adhesions at the hepatic flexure. This was confirmed by the X-ray showing a dilated cecum with, evidently, some obstruction of the hepatic flexure. In that particular case the membrane extended not only along the ascending colon, but also half way across the transverse colon, a condition I have not seen described as usual. They usually have this membrane attached to the ascending colon and cecum.

"The end result in these cases has not as yet been definitely settled. Jackson says that the technic is not yet fixed. We do not know what we should do in these cases. This patient was operated on in April and I heard from her physician several months later and she told him at that time that she was in perfect health and had gained 25 pounds in weight. We had a patient in the service of Dr. Campbell, the patient being operated on Tuesday, and a diagnosis was made before of Jackson's membrane, and another case which was operated on this morning showed a very small Jackson's membrane, which probably was not giving any symptoms. We have seen some marked cases of this condition.

"It seems to me that it is advisable to put the patients in the left lateral position and keep them there for a week or ten days in order to allow the ascending colon to drop away from the lateral wall of the abdomen to prevent any tendency to a reformation."

Obstetric (Brachial) Paralysis.

Reported by Royale H. Fowler, M.D.

Before reporting the above case, Dr. Fowler stated:—"I regret I am unable to present the patient in this first case, but I have illustrations here which will show the condition. I might say that Dr. Eastmond took the X-ray for me which you are seeing, and states that there is some evidence of brachitis."

F. G., a girl of three years of age, was brought to me in February, 1911. The visible complaint was a deformity of the right hand and paralysis of the

arm on the same side. Mrs. G. has given birth to three other children who are in good health. The father, who was present at the birth of the patient, stated that the midwife who delivered the baby pulled very forcibly upon the arm. She gave as an excuse for rapid and forceful extraction the fact that "the cord had ruptured within the womb and that the mother was bleeding to death." There was an alarming hemorrhage following the child's birth, but the mother recovered. Paralysis was observed immediately following birth. This improved in part. At the age of six weeks the hand became noticeably deformed, the thumb was adducted, the fingers became contracted and could not be straightened out. When two years of age she could move the thumb slightly. Recently a swelling was observed at the anterior aspect of the elbow. Examination at this time revealed a swelling which corresponded to the radial head, dislocated anteriorly. The dislocated head was easily reducible without pain, but did not remain in the normal position. The hand was flexed at the wrist with slight ulna deviation, the thumb was adducted and extended. There was hyperextension of the proximal phalanges, slight macrodactylism. The distal phalanges were flexed on the proximal. The fingers could be straightened but returned to the deformed condition. There is no contraction of the right pupil. Diagnosis: musculospiral and ulna paralysis. In March the patient was referred to Dr. F. C. Eastman for treatment.

November 26, 1912, the patient was again brought to me. The father urged that some surgical treatment for the relief of this distressing deformity be undertaken. My notes under this date are as follows:

The dislocation of the radial head has become irreducible, slight partial dislocation at the shoulder. Motions at the shoulder are restricted. The arm can be moved voluntarily backward, forward, toward and away from the body. Pronation of the hand is lost. The wrist drop has remained in *statu quo*. Extension is lost. The four fingers can be flexed to a slight degree, the thumb can be flexed and abducted. Dr. Eastman, who kindly studied the neurologic aspects of the case reports as follows:

Examination of F. G., made on December 4, 1912, shows the following condition of her right arm: Paralysis, with reaction of degeneration of the triceps, supinator longus and brevis, extensor minimi digiti, extensors and long abductor of the thumb, flexor carpi ulnaris, ulnar distribution of the flexor profundus digitorum, and the intrinsic muscles of the hand. There is also a decided limitation in the use of the deltoid and rotators of the shoulders, but the electrical reaction to the faradic current is good. In other words, the involvement is chiefly that of the musculospiral and ulnar nerves, and appears to be confined to the lower portion of the brachial plexus, including the sixth, seventh and eighth cervical and first dorsal nerves. Originally the trouble may have been more extensive and involved the deltoid and rotators of the shoulder accounting for the present limitation of motion in those muscles in spite of the good electrical response. There has been marked failure in the development of the bones of the arm and the shoulder. Right scapula measures 8; the left, 10 cm.; right arm, 40; left, 45 cm. long. Circumference of right forearm, 11; left, 14 cm.

Sensation is perfect at the present time, but the father says that at the time the child was six months old, there was no sensation in the forearm. Ulnar, radial and olecranon reflexes absent. Arm cold and slightly cyanosed. Marked atrophy of all the affected muscles. Slight subluxation of the shoulder and dislocation of the head of the radius.

The case is not one of the ordinary Duchenne type of obstetrical paralysis, resulting from pressure upon the neck and shoulder during birth, but is probably of the rare form known as the Dejerine-Klumpke type and is the result of severe traumatism of the arm at the time of birth.

Non-Descent of the Cecum in a Case of Acute Appendicitis.

Reported by Royale H. Fowler, M.D.

The second case which I have to report is one of non-descent of the cecum occurring in a station agent in the employ of the Long Island Railroad. The patient was seen in consultation with Dr. N. S. Wadhams, July 31, 1912. The patient had been ill for two days when I saw him. His chief complaint was peri-umbilical abdominal cramps associated with vomiting. The temperature was 101 2/5; pulse, 110; respiration, 26. There was rigidity and tenderness in the right upper quadrant, somewhat low for gall-bladder infection, and high for appendicitis.

I made a diagnosis of appendicitis. There were the usual signs, with the exception that the tenderness, which was marked, was more in the upper right quadrant than in the lower, as we would expect in the usual case.

The patient was removed at once to the Southampton Hospital and subjected to operation. I opened the abdomen through a right rectus incision, and after a rather protracted search came upon this condition of affairs, which is illustrated. The appendix was adherent throughout its entire length to the post-cecal wall. It is to be noted that the cecum, in addition to preserving the fetal position, showed the persistence of the conical type. The appendix was bulbous at the end, constricted at its middle and later, upon being split, was found to be distended with pus. It was excised, unruptured, the base tied off and the wound closed around a small cigarette drain, inserted into the bed which the appendix had occupied. Following a wound infection, the wound healed. When the patient was last seen in October, 1912, he was in vigorous, robust health, carrying out his work as a station agent, cured, with slight bulging at the site of the incision, but with no symptoms referable to the non-descend of the cecum.

Splenomyelogenous Leukemia. Patient.

Reported by Geo. L. Buist, M.D.

Patient.—Mrs. M., 39 years of age, mother of 11 children, living. Two miscarriages. Last child 14 months of age, living.

Family History.—Negative. Husband apparently healthy. Denies luetic history.

Present History.—Always healthy until about one year ago, when two months after the birth of her last child she noted a lump in her left hypochondrium. She had moderate pain over that region, with rather constant dull pain in the left lumbar region. Her temperature at that time was 102 degrees. Perspiration was profuse.

Physical Examination.—For the sake of brevity, the negative findings will be omitted. There was a hemic murmur. The spleen could be felt with a smooth edge about three inches below the free edge of the ribs in the mammary line. It was freely movable and not tender. The liver was enlarged and palpable in the mammary line one inch below the free edge of the ribs. The patient was referred to the hospital with the idea of obtaining a complete blood picture to be followed by a splenectomy. The blood picture was typical of a splenomyelogenous leukemia. At the same time a Wassermann was reported double positive. The patient instead of splenectomy received a full dose of salvarsan. Her improvement was marked, so far as her general condition was concerned. She was then referred to her family physician, who gave her daily intramuscular injections of mercury. At the end of four weeks of this treatment, she returned for another injection of salvarsan. This was given, as usual, in the vein of the arm. Again she seemed to improve in a general way, but without any marked diminution in the size of the tumor. Since that time, November one year ago, she has been mainly on some arsenical preparation, principally Zambelletti's iron, arsenic and strychnin. Her general condition has been fairly good, but the spleen, as you will see, has enormously increased in size until it now reaches the crest of the ilium. The liver has also enlarged to the same point on the right side.

The blood picture, which is typical of this condition, will be passed around.

I might add that the patient has at frequent intervals, prior and after arsenical treatment, had several profuse hemorrhages of the bowel. This is, in this disease, often the case. Lately the patient has developed a number of what feel like fibrous lumps on the extremities. The more commonly-found enlargements are said to develop from the bony structures. They vary in size and are irregular in shape. Some of them have decreased in size from time to time. These masses might suggest the idea of sarcoma, but the blood picture would seem to be unquestionable from a diagnostic standpoint.

Pathology.—Adami and Ehrlich and most other pathologists now consider that this is a disease of the bone marrow in which the myelocytes predominate.

The great enlargement of the spleen is considered by them as a secondary condition, due to an accumulation, rather than to a formation, of blood cells. If this be true, then it would seem that a splenectomy in these cases would not be logically indicated. The history of these cases, when left without treatment, seem to have periods of quiescence and apparent remission.

Etiology.—Unknown. It has frequently been noticed to have developed during pregnancy. Osler reports a case where one of the children of the mother developed it before the condition was noted in the mother herself.

The last child of my patient has an enlarged spleen, but the blood picture does not indicate anything like leukemia.

Malaria is considered, along with syphilis, to be a possible etiological factor.

Conclusions.—From the accepted pathology of this condition, viz., a disease of the bone-marrow and not a primary disease of the spleen, it would seem illogical to expect improvement by surgical interference.

That from a medical standpoint, in this case at least, arsenic would seem to at least ameliorate the symptoms.

The question is raised as to the reliability of the Wassermann reaction in these cases. I can find no data on this point. Certainly in this case mercury did not seem to help in any way.

I have seen one case in which the spleen was as large as that of the patient here presented, but without the accompanying enlargement of the liver. The patient under X-ray treatment had the spleen reduced so that it was scarcely palpable. She returned to her work as a teacher, but died a few years after that from the original trouble, having had a remission of some eighteen months or more.

Any suggestions in regard to treatment or causal factor in this case will be greatly appreciated.

HEMANALYSIS BY
FRANCIS A. HULST, M.D.,

Name: Mrs. R. M.	869 Kent Ave.	Date, September 17, 1913.
Hemoglobin, 32%.	No. of Leucocytes	
	Counted,	600. Normoblasts, 2.
Erythrocytes, 2,167,000.	Polymorphonuclear	
	Neutrophiles,	30.1%. Megaloblasts, 0.
Color Index, .73.	Lymphocytes,	7.5%. Microblasts, 0.
Leucocytes, 295,400.	Large Mononuclear,	6.5%. Macrocytes.
Plasmodium Malariae.	Eosinophiles,	3.1%. Microcytes.
Wassermann Reaction, ++.	Mast Cells,	6.1%. Poikilocytes, 0.
Widal Reaction.	Transitional.	Polychromasia, 0.
Parasites or Bacteria.	Myelocytes Neutro- phile,	41.6%. Remarks.
	Myelocytes Eosinophile, 2.	
	Myelocytes Basophile, 3.	

Red cells irregular in size, good shape and little degeneration found.
Some are large and pale.

(Signed) FRANCIS A. HULST, M.D.

(To be Continued in April Number.)

Medical Society of the County of Kings

MONTHLY BULLETIN TO MEMBERS

FEBRUARY, 1914

MINUTES OF STATED MEETING, FEBRUARY 17, 1914.

The President, Dr. J. Richard Kevin, in the Chair. There were about 250 present. The meeting was called to order at 8.30 P. M.

The minutes of the preceding meeting were read and approved.

Report of Council.

The Council reported favorably upon the following applications for membership:
Anna M. Agnew, L. I. State Hospital.
Donald M. Gildersleeve, 184 Joralemon St.
Daniel A. McAtter, 4430 18th Ave.
Constant E. Schradieck, 21 Hanson Pl.
Marcus F. Searle, 775 Washington Ave.
Sanford Shumway, 442 Lafayette Ave.
William L. Suesholtz, 180 Martense St.

Election of Members.

The following, duly proposed and accepted by the Council, were declared elected to active membership:

Benjamin Aquaro-Deodati, 637 Lorimer St.
Gerhard W. Heuser, 560 McDonough St.
Leon E. Lesser, 28 Douglass St.
Samuel James Post, 1857 93d St.
Robert Schulman, 237 Rutledge St.
Milton I. Strahl, 164 South 4th St.

Applications for Membership.

Applications for membership were received from the following:

James A. Cooley, 552 Pacific St.; Cornell, 1908; proposed by D. F. Lucas; seconded by A. M. Judd.
William C. Dean, 26 Palmetto St.; N. Y.

- Univ., 1897; proposed by C. D. Kevin; seconded by Membership Committee.
- Francis J. Doyle, 151 Hull St.; L. I. C. H., 1902; proposed by C. D. Kevin; seconded by T. A. McGoldrick.
- Wm. F. Drescher, 289 11th St.; L. I. C. H., 1912; proposed by S. H. Lutz; seconded by B. C. Collins.
- Wm. J. Flannery, 238 Arlington Ave.; Yale, 1901; proposed by J. R. Kevin; seconded by Membership Committee.
- Emil F. Hartung, 358 Marion St.; L. I. C. H., 1884; proposed by C. D. Kevin; seconded by Membership Committee.
- M. Malcolm Knoller, 246 Schermerhorn St.; L. I. C. H., 1909; proposed by M. B. Gordon; seconded by E. H. Mayne.
- Chas. H. L. Moseley, 929 Jefferson Ave.; N. Y. Univ., 1890; proposed by C. D. Kevin; seconded by Membership Committee.
- John A. Quell, 1219 Dean St.; P. & S., N. Y., 1902; proposed by J. R. Kevin; seconded by Membership Committee.
- Louis Schaefer, 1286 Carroll St.; Cornell, 1902; proposed by C. D. Kevin; seconded by J. M. Scannell.
- John F. Southmayd, 380 Union St.; P. & S., N. Y., 1892; proposed by J. J. Sheehy; seconded by B. Harris.

Applications for Reinstatement.

(Former Members.)

- John N. Balderson, 309 Decatur St.; L. I. C. H., 1908.
- Dominic G. Bodkin, 897 Lafayette Ave.; P. & S., N. Y., 1899.
- Walter J. Brinckerhoff, 180 Willoughby Ave.; L. I. C. H., 1892.
- John J. Dooling, 31 Van Buren St.; L. I. C. H., 1899.
- Henry C. Fulda, 683 Bushwick Ave.; P. & S., N. Y., 1908.
- Percy Houghton, 195 Leonard St.; Georgetown Univ., 1901.
- Leo A. Lynch, 591 Eastern Parkway; Johns Hopkins, 1903.
- Leo A. Parker, 77 New York Ave.; P. & S., N. Y., 1905.
- James G. Trimble, 503 Vanderbilt Ave.; Harvard, 1906.
- Owen M. Waller, 762 Herkimer St.; Howard, 1903.
- Frank E. Wilson, 1242 Bushwick Ave.; Jefferson, 1882.
- Charles Wuest, 1025 Bushwick Ave.; P. & S., N. Y., 1887.

Scientific Program.

1. Paper: "Duodenal Alimentation and Medication." (With lantern slide demonstration.)
By James Taft Pilcher, M.D.
Discussed by Dr. Charles Eastmond and Dr. M. H. Gross.
2. Paper: "Remodeling the Skeleton by Original Uses of the Bone Graft. A Report of 230 Cases." (Illustrated by lantern slides.)

By Fred. H. Albee, M.D., of Manhattan.
Discussed by Dr. Walter Truslow and Dr. Charles Napier.

3. Paper: Medical Economics: "Exposé of Quacks in New York and Legislation Inaugurated." (With chart demonstration.)

By S. S. Barringer, M.D., Medical Advisor of Venereal Division, Board of Health.

In closing, Dr. Barringer recommended that the Society send a representative to the Committee of Public Welfare of the Board of Aldermen in order that the Committee might be correctly informed of the Society's opposition to quackery.

A unanimous rising vote of thanks was tendered the speakers of the evening.

Miscellaneous Business.

Dr. Wm. J. Cruikshank's remarks regarding the necessity for close co-operation between the medical profession and the Department of Health were received with applause.

The Council of the Society having received the following letter from the Department of Health, suggested that members desiring to volunteer for the service send in their names to the Secretary.

February 4, 1914.

Medical Society of the County of Kings.

GENTLEMEN: A constantly increasing number of patients, male and female, are applying to the Wassermann Clinics of the Department of Health for treatment. Those who cannot afford to pay for treatment are referred to clinics. Those who can afford to pay should be given a list of physicians making a specialty of venereal diseases, and, if possible, residing in the neighborhood in which the patient lives or works.

The Department of Health has divided the City of New York into seven districts:

- Borough of Manhattan (three districts).
- Borough of Bronx.
- Borough of Brooklyn
- Borough of Queens.
- Borough of Richmond.

The Department of Health requests the Medical Society of the County of Kings to supply, for the use of the Department, a list of those physicians in each of the above-named districts, who make a specialty of the treatment of syphilis and gonorrhœa in men and women.

Similar letters are being sent to the New York Academy of Medicine and the Medical Society of the County of New York.

Very truly yours,

S. S. GOLDWATER, M.D.,
Commissioner.

The following resolution, presented by Dr. LeGrand Kerr, as Chairman of the Committee on Education, was unanimously adopted:

WHEREAS, The number of students in the high schools and private secondary schools in Brooklyn and Queens, and in the outlying counties on Long Island, is approximately 37,000 and is larger than in the same classes

of schools in Manhattan and the Bronx, and the number of young men and young women residing on Long Island who are attending college is very much smaller than in Manhattan and the Bronx, or in any other large aggregation of population in our northern and western states, and the opportunities for college and university instruction are very limited on Long Island, and it is impracticable for students residing in Brooklyn and Queens to attend college in Manhattan while residing at home; and

WHEREAS, A representative Citizens' Committee of 150, interested in higher education, has prepared a form of charter for a Long Island University, to be located in Brooklyn, and has presented the same to the Board of Regents of the State of New York; and

WHEREAS, There are in Brooklyn already several institutions for higher education, as the Polytechnic Institute, Adelphi College, the Long Island Medical School, the Brooklyn College of Pharmacy and the Brooklyn Law School, which may well become integral factors in a Long Island University, and the Brooklyn Institute of Arts and Sciences is already doing the work of the Extension Departments connected with our larger universities; therefore

Resolved, That the Medical Society of the County of Kings heartily approves of the establishment of a university on Long Island, to be located in Brooklyn, and pledges itself to co-operate with the Citizens' Committee in the establishment of a university, believing that such university will be of very great advantage to the large and growing population on Long Island and especially to the young men and young women who desire, higher, technical and professional education.

Dr. Sylvester J. McNamara, Chairman of the Committee on Legislation, reported that his Committee was actively co-operating with that of the State Society in all matters appertaining to medical legislation.

Dr. Thomas Dixon asked for information concerning the action of the Committee on Legislation for the year 1912-13 regarding certain bills relating to the practice of optometry. The Chair stated that the doctor's question could not be answered without searching the records, as the Committee had been discharged.

The following resolution, presented by Dr. Louis C. Ager, was unanimously adopted:

Resolved, That the President be empowered to appoint a committee to confer with the Committee for the Prevention of Tuberculosis and with Social Service Workers for the purpose of securing a Hospital Admission Bureau in Brooklyn.

Meeting adjourned at 10.45 P. M.

Through an error the name of Dr. Edwin A. Griffin was not indicated among the delegates elected the State Society.

BURTON HARRIS, *Secretary*.

PRESIDENT'S ADDRESS.

J. RICHARD KEVIN, M.D.

I would be less than human did I not recognize the distinct honor you have conferred on

me, by permitting me to preside over your distinguished body. I have had various recognitions in life thus far, but this honor, coming as it does from my contemporaries, I recognize as the highest that has been conferred upon me.

The Medical Society of the County of Kings has had a glorious past; it has kept pace with the rapid progress of time; it has no apology in the consummation of its duty.

I see in its future, in the rainbow of promise, the completion of efforts within our province which shall reflect credit on this and encouragement to the next generation.

This parent body, with its membership of 865 energetic physicians and surgeons within the domain of Kings County, has an unlimited field of strength and usefulness. In proportion to its strength, however, are its responsibilities.

Like a parent is to his child, so is this Society to the medical profession of Brooklyn.

Our members look to this Society, not alone for light of knowledge through scientific discussion, but they expect also that we will lead—not follow—in civic hygienic affairs, and safeguard the rights and interests of our honored profession.

Let me remind you that we have numerous subsidiary bodies formed solely for the scientific discussion of the special branches.

It will be my purpose to provide abundant thought for each session, of material subjects that will interest the majority of the members, with short and concise papers, leaving to the Pathological, the Surgical, the Internal Medicine, the Neurological and the various other branch Societies, the discussion of the papers of deeper and more researchful nature.

I feel confident that I do not misinterpret the wishes of the majority of this body when I urge more attention and action to medical economics.

We complain that the Board of Health is usurping too much authority and is constantly invading the rightful precincts of the practitioner of medicine.

We murmur because we are told the nurses in that department are actually practicing medicine.

We recognize that the dispensary and hospital abuses of charity are growing to a gigantic degree of evil.

Has it shocked the sensibilities of any of you, to perceive in some of the daily papers the advertisement of the Board of Health of this Empire City, in the same column with quacks and charlatans, begging for patients to come to the new City Venereal Hospital? Mark you, this exploitation is at the expense of you and me, through taxation.

And yet we sit idly by and encourage these gross injustices to exist, and by our own indifference endorse them.

Whatever opposition manifested so far, has been of the guerilla type of warfare—that is, firing a stray shot, then running to shelter. Whereas, if this regiment of doctors, with their weight and standing in this community, and the influence of their personality in their

various environments, would concentrate and unite upon a righteous demand, what force, either civic or political, could stand in its way to prevent its success?

There is good reason to assume that during this civic administration a new City Charter will be provided. If this be true, although we were practically denied a voice in the consummation of the present one, we should be ready to demand a voice in the proposed new Charter.

Ponder for a moment over some of the provisions of the present one!

The Board of Health has consisted of three members, namely, the Health Commissioner, who is a layman; the Police Commissioner, another layman, and the Health Officer of the Port, a State officer.

What a paradox! Where the health and consequent happiness of five millions of people are at stake, the people tolerated a consultation of one physician and two laymen.

Yet, were any humble citizen of this commonwealth afflicted with a simple malady which alarmed his family, a consultation of at least two doctors would be demanded.

On the other hand, there is provided in this Charter, a Park Commission of three, one for Manhattan and Richmond, one for the Bronx and one for Brooklyn and Queens, each having full power in their respective districts.

We have thus provided a consultation of three specialists to look after the health of the tree and the grass plot of our parks.

For economic purposes you may perhaps concentrate into one head, the Police, the Fire Department or the Street Cleaning Department, but to properly provide for the hygienic protection of this immense community, there should be a Board of Health consisting of five members, namely, one representing each borough, and each having definite power in their various sections.

Be that as it may, let us see to it that the new City Charter will provide something more than a *rubber* stamp, marked "Respectfully referred to," for the Borough of Brooklyn!

This Society must continue to sustain the dignity of our profession by repressing self-exploitation in the press and on the platform. The freedom permitted in the duty we owe to the public in educating them in all hygienic questions should be understood by each member. Yet we find some who persist in turning freedom into license. The abuse of this license must be checked, irrespective of the station of the offender. The duties of the profession to the public are plain. Physicians, as good citizens and because of their professional training specially qualifies them to render this service, should give advice concerning the public health of the community. They should bear their full part in enforcing its laws and sustaining the institutions that advance the interests of humanity. They should co-operate especially with the proper authorities in the administration of sanitary laws and regulations. They should be ready to counsel the public on the subjects relating to sani-

tary police, public hygiene and legal medicine.

They should warn the public against the devices practiced, and the false pretensions made, by charlatans, which may cause injury to health and loss of life.

It is unprofessional to procure patients by indirection through solicitors or agents of any kind, or by indirect advertisement, or by furnishing or inspiring newspaper or magazine comments concerning cases in which the physician has been or is concerned.

All other like self-laudations defy the traditions and lower the tone of any profession, and so are intolerable.

It is unprofessional to advocate therapeutic fraud or impossible surgical feats, to boast of cures and secret methods of treatment or remedies, to exhibit certificates of skill or of success in the treatment of diseases, or to employ any methods to gain the attention of the public for the purpose of obtaining patients.

The "Publicity Committee" is not a muzzling committee, it is merely an advisory committee, with whom the members of this Society may consult regarding the extent of their license. It has accomplished good work and it will be continued.

The solution of this problem, however, will remain unsolved until every progressive newspaper has attached to its editorial staff a medical editor.

Ponder, for a moment, the deluded hopes, the squandered savings, and the horrifying misery left in the wake of the Friedman cure, which was heralded with blatant trumpet all over this country from over the seas.

Were the press censored by reputable physicians, the public would be protected from self-exploiting and self-advertising harpies.

* * * * *

The time has arrived when provision should be made to provide more room for our quarters. While the assumption seemed justified fifteen years ago that this building would suffice for a quarter of a century, we find it is imperative to make more provision in the near future. Our library has grown rapidly—more speedily than our most sanguine expectations. There is now no working space for expansion in the library. Our shelves are crowded, and there is no room for future accessions.

A committee of fifty, on ways and means to provide for this, has been formed and has begun its work. I trust that whatever means they may provide for the obtaining of sufficient funds for this end will be cheerfully supported by this body.

* * * * *

There is no reason, except one of apathy, why our membership shall not have reached the one thousand mark at the end of this year. This will be, if you will individually assist the Membership Committee.

It shall be my endeavor to serve all the members of this Society in my régime, knowing full well I cannot succeed unless I receive your full support, and this I sincerely crave.

252 Gates Avenue.

January 20, 1914.

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Original Articles.

SALVARSAN AND SALVARSANIZED SERUM IN THE INTENSIVE TREATMENT OF SYPHILITIC AFFEC- TIONS OF THE NERVOUS SYSTEM.—TECHNIQUE, EXPERIMENTAL CONTROLS, CLINICAL CASES AND RESULTS.*

Frederick Tilney, M.D.,

of Brooklyn, N. Y.

WHEN Moore¹ demonstrated the presence of the spirocheta pallida in the tissues of the central nervous system, he called attention anew to the necessity of using every means at our disposal to combat this organism as it lies embedded in the brain or spinal cord. It has been the reproach of the neurologist that his department offers little or nothing in the way of treatment. In extenuation of these deficiencies one fact should not be lost sight of, namely, that the central nervous system is essentially an ultimate tissue, which, because of its intense specialization and differentiation, has almost entirely lost reparative qualities. The neural elements once destroyed are never restored or replaced by normal tissue. As an organic structure it is the prey of many pathological processes whose nature we do not comprehend. We have no tenable clue concerning the causes of such diseases as paralysis agitans, epilepsy, chorea or the progressive palsies; and we are in even greater darkness concerning these aspects of most of the neuroses and psychoses. Large as is the number of nervous diseases due to these unknown causes, there is as large, and perhaps, a larger number due to a cause that is known and clinically recognizable, *i. e.*, syphilis. According to syphilographers, the disease has been known to attack the nervous system in a few cases during the secondary stage, but, in the main, syphilis of the brain and cord occurs as a late manifestation, hence the terms quaternary syphilis, para-syphilis and meta-syphilis as applied to paresis and tabes dorsalis. For purposes of diagnosis, and from the therapeutic standpoint, it is necessary, if possible, to hold a somewhat more definite view of syphilis affecting the nervous system. Thus, by the aid of the Wassermann reaction we are at present able to

* Read before the Brooklyn Medical Club as a preliminary report based on a study of the intensive method of treatment carried on in coöperation with Dr. Luther Warren.

¹ J. W. Moore, 1913. *Journal of Nervous and Mental Diseases*, Vol. 40, No. 3, Page 172.

state with considerable confidence whether we are dealing with a syphilitic invasion which is active, or with one which has, so to speak, run its course and left the evidences of its destructive work behind it. Indeed, it would seem that we might even go further than this and, although it is always unfortunate to burden our overladen medical nomenclature with new terms, the following distinctions are both significant and important.

First, there are not a few cases which give a positive Wassermann in the blood and a positive luetic reaction in the spinal fluid with a definite history of luetic infection, yet symptomatically show no evidence of any destructive or irritative lesion of the nervous system. If it is possible to exclude other conditions giving a positive Wassermann, such as frambesia, Malta fever, malaria, profound anemia and late tuberculosis, then we should regard these cases as syphilis of the central nervous system. This class of patients is by no means small. Therapeutically it is the class of golden opportunity. Such cases if neglected may pass into conditions due to irritative or destructive lesions of the nerve tissue. Closely allied with these are the cases which not only give a history of luetic infection and have a positive Wassermann in serum and fluid, but in addition manifest some slight or transitory symptoms, such as lancinating pains, attacks of temporary exaltation, delirium or depression, nocturnal headache, irregular knee jerks, irregular or light-stiff pupils, transitory palsies, vertigo, transitory aphasia or amnesia, and perhaps transitory but recurrent delusions. The uncertainty and fugacity of these symptoms permit little reason to believe that permanent, pathological changes have occurred in the brain or cord to cause them. That we are here dealing with an active syphilitic process and its effects there can be no doubt. Such cases as these, and those first mentioned, justify the recognition of a well defined group which may be designated Syphilis of the Nervous System. The cases of this group are characterized by the presence of a positive Wassermann in the blood and a positive luetic reaction spinal fluid; they may or may not present neurological symptoms; they are not due to any destructive lesion of the nerve tissue.

Three members of the same family offer an excellent example of this group. A boy twelve years old began to have severe headache, became stupid and fell behind in his school-work. Because he had Hutchinson teeth his blood and spinal fluid were examined and found positive. The same tests were made upon his seventeen year old brother who was perfectly well and robust. They were positive. The mother of these boys, who for many years had been more or less neurasthenic, also gave positive Wassermanns.

A second group comprises cases in which a history of luetic invasion is obtainable and well marked neurological symptoms are present, but the Wassermann reaction is negative in the blood and the luetic reaction negative in the spinal fluid. Here the active syphilitic process has become attenuated or probably ceased altogether. It has, however, left in its trail permanent, irreparable destruction. To this type the term meta-syphilis or after-syphilis may well be applied.

There is still a third group, intermediate between the first and second, which combines the main features of each. Such cases are of the meta-syphilitic variety since they present symptoms

which are unmistakably due to destruction and degeneration of the nervous tissue, the repair of which cannot be expected. But, in addition to this, they also present a positive Wassermann in the blood and a positive luetic reaction in the spinal fluid indicating an active syphilitic process. They may for this reason be termed Syphilo-Meta-syphilis. This latter terminology is admittedly crude and only tentative. It is suggested for the definite idea it conveys concerning the status of the disease and especially because of its value in prognosis and therapy.

By syphilis of the nervous system, therefore, is meant the active stage in which the Wassermann is positive in the blood and the luetic reaction positive in the spinal fluid while neurological symptoms are either entirely absent or transitory. This does not imply that no pathological changes exist, but that such changes, if present, have not destroyed the nervous tissues. Meta-syphilis is the stage in which degeneration and destruction have already occurred; but the syphilitic process has ceased as shown by the negative Wassermann and a negative luetic reaction. Syphilo-meta-syphilis applies to those cases in which nerve destruction has occurred and the active syphilitic process is still going on, as indicated by the positive reactions in the blood and fluid.

It will be seen that the standard by which any syphilitic involvement of the nervous system is here judged rests upon certain biological tests, *i. e.*, the Wassermann reaction in the blood and the luetic reaction in the spinal fluid. How much faith we may place in these tests will depend somewhat upon our general attitude. That they are open to debate as tests on many points, is admitted. That they are subject to definite limitations is also known, yet their correctness is so nearly universally sustained that at present it would be the part of ultra-conservatism to question their validity. In this light the Wassermann reaction becomes the predominant factor in determining the status of any given case. From what has already been stated it will be evident that upon this basis many cases which have no clinical manifestations must be classed as syphilis, while a large number which unaided clinical diagnosis would recognize as syphilis, because of the symptoms, must be excluded from this category. This distinction has its clear prognostic and therapeutic value. Thus we may assure the patient who presents a positive luetic reaction in the spinal fluid with but little or nothing symptomatic that he may be protected against the progress of the disease and even cured. And, furthermore, it cannot be too insistently urged that such patients should submit themselves to the most approved methods of treatment. If the case be one of a definite meta-syphilis it may be stated with confidence that no improvement can be expected and that no treatment will prove effective. To patients suffering from syphilo-meta-syphilis the prognosis may be made that by appropriate treatment the active syphilitic process can be arrested, the progress of the disease checked, but no improvement assured in such symptoms as are due to the already destroyed nerve tissues. If such responsibility is to be imposed upon the Wassermann reaction we should first know to what degree and under what circumstances it may be trusted. Until recently two general technical methods have been in favor, namely, the original Wassermann and the Noguchi modification. The latter, being the easier and shorter,

enjoyed a wider popularity, perhaps, than it deserved. At present it is thoroughly discredited wherever careful work is being done. It should only be regarded as capable of detecting a relatively small percentage of cases. The long Wassermann alone should be relied upon. It, on the other hand, is not reliable except in the hands of an expert. Many adventitious incidents may arise in the technique to cause a complete miscarriage of the reaction. Thus unclean test-tubes, or a little soap remaining in the vessels used, may upset an entire series. So small an accident as the slight warming of the antigen has invalidated the test. It is necessary, therefore, to know who does the reaction and the general reliability of his work. In addition to these miscarriages in the test itself, there is also the possibility of misinterpretation. For example, a negative Wassermann may be due to recent, active mercurial treatment, and the examiner should, therefore, be informed as to the date of the last treatment. Syphilis is not the only disease in which the Wassermann reaction occurs. It has been observed in the blood in malaria, advanced carcinoma, lead poisoning, lipomatosis, profound secondary and pernicious anemias, advanced tuberculosis, frambesia, leprosy, relapsing fever, trypanosomiasis, and Malta fever;—in general, in hemolyzing diseases which set free the lipid bodies from the red cells of the blood. On our regular cards which are sent with the specimens to the examiner statements are made concerning complications which may suggest any of the above conditions; the date of the last mercurial treatment is also given. In this way the examiner is put in possession of facts by which he may avoid misinterpretation.

Other features beside the Wassermann reaction in the spinal fluid are indicative of a spirocheta invasion. Most important of these is the presence of euglobulin which is detected either by the butyric acid test of Noguchi, or the ammonium sulphate test of Nonne. Another significant feature in the spinal fluid is the increase in the number of the lymphocytes normally present. These cells have many of the characteristics of the small lymphocytes and at the same time resemble plasma cells in some particulars. Definite movements have been observed in them, which fact, in conjunction with their morphology, strongly suggests a phagocytic function. Anything above six or seven of these cells per cubic centimeter is to be regarded as pathological and determines the condition known as pleocytosis. A pleocytosis may range from ten to three hundred cells, or even more, per cubic centimeter. A positive Wassermann, together with a positive globulin reaction, and a pleocytosis, constitute a complete luetic reaction in the spinal fluid, which is conclusive evidence of a syphilitic invasion. The globulin test is nearly as sensitive and almost as pathognomonic as the Wassermann reaction. The presence of this test alone without the Wassermann reaction is presumptive evidence of a syphilitic involvement. Care, however, must be taken in the interpretation of this test, especially if the spinal fluid should chance to contain any red blood-cells as the result of lumbar puncture, in which event the euglobulin test is to be discounted. Not a few cases give a marked euglobulin test and pleocytosis; this should be regarded as a partial luetic reaction and should place the patient in the class of active syphilis. A pleocytosis may exist without either of the other features of the luetic reaction.

It is a question whether this alone would justify the diagnosis of active syphilis. It must not, however, be slighted and should bring the case sufficiently under suspicion to warrant subsequent examinations of the spinal fluid in the expectation of finding a partial or complete luetic reaction. For diagnostic exactness the Wassermann reaction should be tested upon .25 cc., .5 cc., .75 cc., and 1.00 of spinal fluid. This is also of distinct advantage to the therapy since it shows as nearly as may be what progress the patient is making. Thus a patient before treatment may give a 4 plus positive to .25., .5., .75 and 1.00 cc., but after a number of injections be negative to all except the large quantity of 1 cc. For the best results, and with the same objects, the globulin tests should also be titrated.

In 20 per cent of cases the Wassermann reaction of the blood is negative while a complete luetic reaction is present in the spinal fluid. This demonstrates the futility of depending upon the blood Wassermann in suspected cases and in all cases in which completeness of diagnosis is desired. In a few cases showing definite neurological symptoms a positive blood Wassermann has been observed, while the luetic reaction of the spinal fluid was negative. As a rule, these cases sooner or later show a partial or complete luetic reaction. The cell count to be of value must be made immediately at the bedside.

The following reactions may be taken as indications for active intensive treatment.

1. Positive blood Wassermann and complete luetic reaction of the spinal fluid.
2. Positive blood Wassermann and a partial luetic reaction (globulin test and pleocytosis).
3. Negative blood Wassermann and complete luetic reaction.
4. Negative blood Wassermann and partial luetic reaction (positive globulin test and pleocytosis or positive globulin).
5. Positive blood Wassermann and negative test in spinal fluid with neurological symptoms.

The theory of the intensive treatment of syphilis of the nervous system may be summarized as follows: *The introduction of all of the most approved antiluetic remedies in the most efficient way and by the most effective avenues.*

Salvarsan, in the early days of its use, enjoyed a reputation which made it seem little short of miraculous. Wider experience has shown that the best results are obtained when it is used like other medicinal agents,—in repeated doses. The inaccuracy of considering one dose a cure has long since been recognized. As regards its remedial value, there is at present no justifiable ground to question the efficacy of the drug, particularly in syphilis. Its influence upon the primary and secondary manifestations of the disease is remarkable. The result of its application in tertiary lesions is not always as brilliant nor as evident, and this is especially true in involvements of the nervous system. Yet we have enough evidence already at hand to warrant the use of salvarsan in syphilitic affections of the neural tissues. Of the other drugs, which must always occupy a prominent place among anti-syphilitic remedies, mercury, and potassium iodide are the foremost. These three agents, salvarsan, KI, and mercury are undoubtedly the most approved antiluetic remedies and it seems equally certain that

the most efficient way in which to administer them is by the intensive method. This method has long been employed in the administration of mercury and potassium iodide, especially for primary and secondary syphilitic lesions, but it has not been as generally applied to the tertiary forms of syphilis, particularly that affecting the nerve tissue.

To derive the greatest advantages from salvarsan, it also should be used intensively, *i. e.*, in repeated doses over a relatively long interval of time. The practical questions arising in connection with this therapy are; how large a dose shall be used,—how often repeated,—how long continued,—and what form of the drug? As to the size of the dose, this will be largely governed by circumstances. In a patient whose tolerance is not known, it is well to start with a relatively small dose, .4 to .6 grams of salvarsan or .8 to .10 grams neo-salvarsan. If this is well borne, the dose should be increased up to tolerance. It is our present intention to get our patients up to .7, .8 and .9 grams per dose of salvarsan. Smaller doses than .4 grams may be necessary in some cases. The frequency of repetition will often be a matter of careful judgment. We have established rather arbitrary intervals of two weeks between administrations. In many cases this period is too long, and in all, it is certainly the outside limit. Intervals of 4 days are advocated by some writers, and we have seen no ill results and some apparent benefits from these closely-placed treatments. Judgment will be required particularly as to the tolerance and urgency of the case; the gravity of the symptoms and the condition of the patient being, in general, the best guides as to the interval between doses. Very important is the question of how long to continue this intensive treatment. The answer to this is to be found in the Wassermann reaction. Frequent tests of the blood and spinal fluid must be made, and, so long as the Wassermann is positive, or there is a complete or partial luetic reaction in the spinal fluid, the treatments should be continued. With reference to what form of the drug should be employed, the general consensus of opinion now favors salvarsan in preference to neo-salvarsan.

In selecting the avenue by which to administer the drug, there are two, the intra-venous or the intra-spinous route. The subcutaneous and intra-muscular methods are not as directly applicable to lues of the nervous system as the other two mentioned. If the intra-venous method is employed, the solution will undoubtedly reach the central nervous system. Its technique is simple and may be performed with but few precautions and little equipment. To influence a luetic process in the brain or cord, it is probable that large doses are necessary at very short intervals. The second, or intra-spinous method, is considerably more complicated and at the same time it appears to have the advantage of bringing the salvarsan into direct contact with the nervous tissues, and of combining this with the intra-venous method. The intra-spinous technique is as follows:

1. The patient receives from .4 to .7 grams of salvarsan in 200 cc., of normal salt solution intra-venously.
2. After 1 hour 30-40 cc., of venous blood is withdrawn and after proper precautions, placed in an ice-chest over night.
3. 12 cc., of the supernatant serum from this blood is now taken and to insure its being red-cell free, it is centrifugalized for

15 minutes. To it 18 cc., of a normal salt solution (.9 per cent) are added, making a total volume 30 cc.

4. This salvarsanized serum is now activated for 30 minutes at 56° C.

5. When the serum is ready for injection, lumbar puncture is made upon the patient and 30 cc., of the spinal fluid slowly withdrawn. This fluid is sent to the laboratory for examination and in this way an absolute serological control is kept upon the status of the spinal fluid. The cell-count must be made at the bed-side. The 30 cc., of salvarsanized serum are now slowly run into the spinal canal by gravity, care being had that the serum is warm (body heat). The patient is kept in bed for four to twelve hours depending upon the severity of the reaction. Most of our patients, however, are allowed to go home in four hours after the intra-spinous injection. In order to be successful, certain details must be carefully observed in the procedure.

First, the absolute asepsis of the surgical and serological treatment. Every avenue of possible contamination or infection must be rigorously guarded against; for this reason we have felt that it was best to carry on the work in the hospital and this plan has the further advantage of keeping the patient under close observation in case of emergency. Our regular routine is to have the patients enter the hospital on Saturday morning. In the forenoon they receive their intra-venous injection and have their blood withdrawn. They usually remain in bed the rest of the day. On Sunday morning they receive their intra-spinous injection of salvarsanized serum. Sunday evening they are discharged unless they experience a severe reaction as indicated by chill, fever, headache, nausea or vomiting.

We have not yet observed a Herxheimer or other severe cutaneous reaction in any of our cases, although these are said to occur. Headache and malaise are frequently seen which last from an hour to several days. It does not seem altogether fair to attribute this to a salvarsan reaction for often a mere lumbar puncture will determine severe headache and vomiting lasting several days or even a week. In some cases of paresis the injection precipitates an almost immediate attack of acute delirium, sometimes with intense headache and vomiting, but this usually subsides in from 4 to 24 hours. After intra-spinous injection in some cases of tabes the critical pains are temporarily increased. The contraindications for the use of salvarsan are too indeterminate at the present time to dwell upon them at any length. Opinions differ greatly in this matter. What one authority considers a distinct contraindication, another calls an indication. Certainly some cases of affections of the optic nerve and retina are harmed by the drug while others are remarkably improved. The same statement holds for myocardial and renal conditions.

It has been a question how the salvarsanized serum gets into the nervous system, if it gets there at all. To answer this problem it was decided to do some experimental controls on animals. Recalling the fact that vital stains in the hands of Ehrlich were the basis upon which he built up his chemotherapy, and also that the chemotaxis of the vital stain and salvarsan is essentially the same, both being of the benzidin group, it was hoped that some intra-

vitam stain might show the manner in which salvarsan reaches the deeper regions of the nervous system.

Trypan blue was selected as the stain and the experiments were made on cats, dogs and rabbits.

10 cc., of a 1 per cent solution of trypan blue were injected subcutaneously into a dog, a rabbit and a cat. The animal showed no toxic or other effects and was killed in twenty-seven hours. Post mortem showed that while the intestines, kidney, heart, and liver, and skin, were deeply stained, no part of the nervous system or its coverings gave evidence of the trypan blue.

In the next experiment the injections were made intra-arterially with the same results. We then made intra-venous injections of a 1 per cent solution. As a result of this the stain now reached the dura mater and pia mater but did not penetrate into the nervous tissue. The intra-venous injections were next repeated with double the quantity (20 cc.) and three times the strength, but even then there was but little evidence that the trypan blue had penetrated very deeply into the cord or brain. It did, however, stain the meninges. As a final test the solution was reduced to one-tenth of 1 per cent and 5 cc., injected intra-spinously into the subarchnoid space. The animals were killed after three days and all showed that the meninges were heavily stained and at the same time the stain had penetrated deeply into the nerve tissues. Microscopic sections demonstrated clearly the way in which this was accomplished, for it was seen that the stain had travelled along the trabeculæ of the pia mater, deep into the brain and cord, and that it had also penetrated the walls of the veins and capillaries, the endothelium of which was deeply stained. It would seem from these experiments that we have suggestive proof of the way in which salvarsan introduced intra-spinously reaches the depths of the neural tissue and that it is by two definite routes. First, by the trabeculæ of the pia, and second, by penetrating the walls of the veins and capillaries. Furthermore, the intra-spinous method of introduction appears to be the most efficient for reaching the brain and cord, although the intra-venous route may carry the substance to the meninges and very feebly into the neural tissue. For practical purposes it is worthy of note that the salvarsanized-serum treatment combines the advantages of the intra-venous and intra-spinous methods since the patient, who an hour previously received a full intra-venous dose, does not lose all of the salvarsan in his circulation by the withdrawal of 20 cc., of venous blood.

Cases and Results.

Up to the present time we have, or have had, under observation and treatment forty cases of syphilis involving the nervous system. Of these 22 were tabes, 8 general paresis, 3 progressive muscular atrophy (the neural type), 3 syphilitic encephalitis (cerebral syphilis), 2 spastic syphilitic paraplegia, 1 syphilitic myelitis, and 1 syphilitic endymitis with chronic internal hydrocephalus. Time will not permit a review of all of these cases, but a brief summary of some of the more conspicuous examples will be of interest.

Case 1. Syphilitic encephalitis. Male, thirty-eight years old, playwright. Penile chancre, fifteen years ago. In the early spring of 1913 he had several attacks of transitory aphasia and violent

headaches. He was positive in his blood and spinal fluid. In May he became completely hemiplegic on the left side, totally aphasic, and had periods of delusional insanity. He was seen by Dr. Dana and at his suggestion received four intra-venous injections at intervals of one week. This treatment was discontinued at the direction of Dr. Dana, because the patient's condition steadily grew worse. When seen in the middle of June, he was in a desperate state, being so maniacal as to require constant restraint. He was completely paralyzed on his left side and aphasic. Intensive treatment was again advised. At intervals of four days he received 5 per cent of a gram of salvarsan intra-venously, and intra-muscularly, salicylate of mercury every week. Altogether he received sixteen intra-venous injections of salvarsan and in five weeks his mania disappeared. In September his speech and locomotion had so far improved that he was able to get about, and in October he was engaged in writing another play. Since then the reactions have been found to be still positive and he continues to receive treatment at longer intervals.

Case 2. Syphilitic encephalitis. A well known actress playing in stock productions, thirty-five years old. Initial and secondary lesions denied by name and symptoms. She suddenly became aphasic while acting. She was treated for some time for hysteria. Subsequent examinations showed that in addition to a combined aphasia, she presented an agraphia, a marked euphoria and some dyspraxia. Her spinal fluid and blood were both 4 plus positive. She received eight, .6 gram doses of salvarsan intra-venously and daily inunctions of blue ointment. In three months she was able to return to her company, and since then has been in repertoire with all her former effectiveness.

Case 3. Syphilitic encephalitis. Chauffeur, twenty-two years old. Initial and secondary lesions denied by name and symptoms. While driving his car he suddenly became amnesic and aphasic. Subsequently he developed marked emotional changes and memory defects. On examination his blood and spinal fluid were 4 plus positive. He presented a complete combined aphasia, and besides this, a rather remarkable type of facial paralysis. This paralysis was only evident when he smiled, and at such times the right side of his face did not participate in his mirthful expression. No facial paralysis was evident when his face was in repose, when he whistled, or gave expression to distress. This symptom seems to indicate that part of his lesion, at least, was in the region of the optic thalamus. He received six .6 gram doses of salvarsan at intervals of one week and later 3 similar doses at intervals of one month. During all this period he was on inunctions of calomelol. In five months all of his symptoms had disappeared, his Wassermann was negative, and he had taken up his vocation again.

Case 4. General Paresis. Male, thirty-eight years old, Salesman. Initial lesion ten years ago. During the spring of 1913, he gradually became apathetic and surly. In June he was seized with convulsions and soon became typically parietic. He was positive in his blood and spinal fluid. It was necessary to commit him to a state institution. From June to September he received ten intra-venous injections of .6 grams salvarsan at intervals of about ten days. He also received inunctions of mercury and potassium iodide part of the time. He was discharged from the institution

much improved in September. Since then he has had three intra-spinous injections in Manhattan and three at the Long Island College Hospital. He is now back at work, drawing his regular salary, and steadily improving. His greatest improvement has occurred after the intra-spinous injections. At present he is still 4 plus positive in blood and fluid and therefore remains on our list of active treatments.

Case 5. Syphilitic Paraplegia (Hereditary Syphilis). A child five years old gradually became paraplegic in the course of three months and showed signs of mental deficiency. She had a 4 plus positive in her blood and spinal fluid. So did her mother. On intra-venous injections the child has improved and the mother is being similarly treated.

Case 7. Progressive Muscular Atrophy (Neural type). A male, forty-five years old. Initial lesion ten years ago; within the past six months developed a progressive symmetrical atrophy and loss of power in both legs. He had a positive blood Wassermann and a partial luetic reaction in his spinal fluid. After five intra-spinous injections his strength is returning and the muscles appear to be increasing in volume. He is still under treatment.

Case 8. Syphilitic Myelitis. Male forty. Initial lesion denied. For several months unable to walk because of pain in back and legs. Examination showed bilateral ankle clonus, bilateral Babinski and a 4 plus Wassermann in the blood and a partial luetic reaction in the fluid. After four intra-spinous injections he is able to get about, almost entirely free from pains.

In general as to our results, we may record 100 per cent recoveries in syphilitic encephalitis. In general paresis the figures are far less encouraging, for only the cases which come to treatment early show any improvement. This improvement, however, has been decisive. The cases of any time standing do not seem to be benefited, although our period of observation may not yet be long enough. The same statement holds for syphilitic progressive muscular atrophy. In *tabes dorsalis* all cases in the syphilo-meta-syphilis stage have shown some improvement. This improvement has been most prominent in the reduction of the lancinating pains. These pains, in some cases, are greatly increased immediately after the injection, but very shortly subside and the patient suffers less annoyance in this regard than prior to the treatment. Also, in the matter of the locomotor ataxia some improvement has been observed.

Realizing how limited our experience still is in this matter, we do not wish to draw any conclusions, but rather offer certain suggestions which the facts brought out in this paper seem to warrant. These suggestions are as follows:

1. That all cases showing definite or indefinite neurological symptoms not otherwise explainable, should be considered under suspicion.

2. That such cases once under suspicion for any reason whatsoever require a complete serological examination of the blood and spinal fluid. The examination of the blood alone is not sufficient for the requirements of a complete diagnosis.

3. That either a positive blood Wassermann and a positive complete luetic reaction in the fluid, or a positive complete luetic reaction alone, or a partial luetic reaction and a positive blood

Wassermann, is a certain indication of an active syphilitic process in the central nervous system which calls for intensive treatment.

4. That the Wassermann test to be reliable must be in the hands of an expert and must be the long method.

5. That the best therapeutic results are to be obtained from the intensive, mercurial, salvarsan treatment; that salvarsan is most efficient if given intra-spinously, although it may be effective by the intra-venous method; that such treatment will probably yield better results if administered by an organized force trained to coöperate in the details of the procedure; that the treatment should be continued until the luetic reaction and blood are negative and that all cases answering to the types here described as syphilis and syphilo-meta-syphilis of the nervous system, should have a conscientious and impartial trial of this intensive treatment.

It is not our desire in any sense to take a dogmatic position, for we are still investigating, but what we have seen ourselves, and what we know from others, inspires us with much hope.

A TWENTY MINUTE TALK ON ANTERIOR POLIOENCEPHALITIS.*

By Irving David Steinhart, M.D.,

of New York City.

THIS paper will be the third I have prepared on this subject in the past five years and if an excuse is needed for so much repetition of the same subject, let it be this: That despite the fact that many others besides myself who are intensely interested in this disease and its unfortunate little victims have written much about it, the patients who are afflicted with it do not get the benefit of as early a diagnosis as they should nor the best post paralysis treatment. For some reason or other the physician in charge of a case seems to believe, many times, his full duty to his patient is finished as the acute stage of the attack passes into the chronic stage. This is a very grave error and means that oftentimes a more or less cripple is made, whereas, with an intelligent course of after treatment a very little disability, or even none at all, may be the end result.

This is something worth trying for and whereas the latter result will not be your good fortune in every case there are many acceptable stages between it and total disability. Because one is not a regular specialist in orthopedic surgery is not a good reason for neglecting this class of cases, but with both physician and patient "perseverance" must be the watchword.

My first paper on this subject was in 1908, before the Practitioners Society of Orange, N. J.; my second paper in 1911 was at Pittsfield, Mass., before the Berkshire District Medical Society, and in both these audiences were many physicians to whom my papers were of special interest because of cases at that time they were in active charge of. Perhaps in this audience there are also physicians to whom this paper will be of special interest. To those of you who have had cases of this kind I would ask that if you have noticed any symptoms that I do not enumerate when I dis-

* This paper was read before the Medical Association of the Greater City of New York at their special Brooklyn meeting in December, 1913.

cuss the symptomology of this disease please speak up and tell about them for it is important for every possible aid to early diagnosis to be known.

Anterior Polioencephalitis is the name I have proposed for the infectious disease variously designated as anterior poliomyelitis, infantile paralysis, atrophic paralysis of the spinal cord, etc.; I will use this name throughout my paper, which, I warn you in advance, is a very long one, but which I hope will repay you for your patience in listening to it by adding to your practical knowledge of the subject. I have adopted this name of anterior Polioencephalitis because the older names with the exception of infantile paralysis are misnomers in that they all would indicate only a spinal condition. This we know is not so, for it is those which are not limited to the spinal cord, but wherein the process goes higher that furnish the fatal cases. Infantile paralysis is also not a good name because there are several types of paralysis which may come on in early life, and also this disease is by no means limited to infants or young children. The name I use indicates both a condition of the brain and spinal cord and therefore, to me, at least, more suitable.

I am not going to burden your mind with a long historical review of the various epidemics which have occurred from time to time nor with the names of the various investigators of each. It would be of no practical value to you in your daily work and I want my paper to be of this service to you. I will content myself with saying that apparently this disease has been known since the days of the old testament of the bible, for in one of the chapters, I don't recall just which one now, a reference is made to a similar disease which afflicted children of even that day. From that time on the disease has apparently been present in a more or less epidemic form in several parts of the world, every now and then increasing in severity until it assumes epidemic proportions. Our own country has suffered from such an epidemic for the past five years, various sections of it bearing the brunt of the attack at different times. Our own country has not been alone, however, in suffering from the ravages of this dread disease, but the world at large has also had epidemics of more or less severity and in the trail of this disease is an army of cripples, mostly children, some more disabled than others, but almost all who have had the disease with some mark of it remaining.

There is no doubt that for some, at least, of the spread of the disease our profession is to blame because of a laxness in quarantine matters. This, however, I will discuss later.

That this disease merits our most earnest investigation and earnest attention no one can doubt who has seen even one case of it. Those of us who have seen many hundreds of cases can realize how great a boon the discovery of a reliable preventative will be. No matter how many cases of this affliction one handles one never can lose ones sympathy for these, for the most part, little patients.

Under its common name of infantile paralysis made known to the public by the lay press, its appearance in a locality means that all parents who can, will promptly send their children elsewhere to escape from the possibility of being brought down by this terrible blighter of human health and happiness, and those parents who

cannot send their children away from the neighborhood will live with terror in their hearts in the daily fear that their household will be the next invaded by the poison of this disease. They are not cowards because of this attitude, nor are they unduly afraid, for here is a disease that is no respecter of homes, rich or poor, or of localities aristocratic or poverty stricken, and which strikes "like a thief in the night" suddenly and sharply. The kind of a blow it strikes is ever to be remembered, whether it be of the fatal type or of the crippling kind. Just picture it for yourself in your own mind—and you realize why all that is known as to prophylaxis, symptomology, diagnosis, early and late treatment, etc., should be given as wide a circulation as possible.

To Dr. Simon Flexner and his associates at the Rockefeller Institute in New York City we owe a good deal of our present knowledge of this disease so far as bacteriology and pathology goes. Unfortunately so far as symptomology, prophylaxis and therapeutics are concerned, despite their best efforts, no great advance has been made. The hope for the future is promising not only from here, but because investigations are being carried on all over the world in an endeavor to find a good remedy both from a preventive and curative standpoint. The disease is caused by a bacillus which has not as yet been isolated or definitely cultivated for any accurate study of it.

The reason for this has been that the finest filters are not fine enough to keep the bacilli from passing through. So far as can be ascertained the nasal cavity is the main entrance for the poison into the body but the buccal cavity must also be considered as of importance. While the specific bacilli must be considered the primary cause of the disease, the secondary or actual exciting causes must be considered, as, of course, the mere presence of germ life is not disease. These secondary causes must be something that permits the germ life to attack the body organism—something that makes the normal protective forces of the body less resistant to the evidently intense poison of this disease. These secondary causes are not pathognomonic to this disease but really refer to any disease caused by bacilli. I will mention some of these causes which occur to me now and also some that have been mentioned by me in previous papers. I am going to mention first the gastro-intestinal tract because I believe that pathological conditions existing here, particularly when accompanied by diarrhœa or constipation, especially the latter, are very important. The improper digestion of food, whether in the intestines or stomach, is a strong factor against proper nourishment of the body organism and therefore against good health. Lack of proper nourishment of the body organism means a weakened defense against invasion and therefore increases the likelihood to disease. Secondly the formation of poisonous gases in the gastro-intestinal tract and their absorption by the blood current means that healthy cells are going to be weakened by these toxic gases and hence become less able to withstand the attacks of disease-giving germs. In diarrhœal conditions the body is not only deprived of a good deal of its nourishment but is forced to yield up part of its reserve to withstand the depletion, and the changes in the blood current are also detrimental to the performance of its proper functions. Therefore improper diet, a very important item because this disease most

often claims young children as its victims, is to be considered a secondary cause of prime importance and for this reason it behooves all of us to instruct our patients most diligently what constitutes a proper diet for children at the various ages, and may I state right here that beer, wines, and other alcoholic drinks, soda water and the other so-called "soft drinks," vichy, selzer, ice-water, tea, coffee, etc., are among the drinkables that have no place in the regular diet of a child; likewise that fried food of any kind, cakes, pastries, pies, ice cream, "sundaes," nuts, pork, sandwiches and like articles of food are also not to be recommended as a diet for young children. The next part of the body to be mentioned wherein secondary causes may be found is the respiratory tract, particularly the nasal portion of it and the sinuses opening into it. The toxins of this disease artificially introduced into this cavity have given very positive results, especially so where either artificially made lesions or pathological conditions existed in the cavity.

Therefore, again I draw your attention to the necessity of instructing parents properly, only this time in the care of the mouth and nose, not forgetting the proper care of the first set of teeth as well as the second. No, when I mention the proper care of the nasal and buccal cavities I am not advising a wholesale slaughter of tonsils and adenoids, for I must admit I am very firmly opposed to this very common operation until absolutely every other measure of relief has failed. I do mean, however, that pathological conditions, especially those in the anterior portions of the nasal cavities should be treated medically or surgically as the condition present demands.

The third division of the body to be spoken of as a site for the development of secondary exciting causes is the nervous system, and as the toxins of this disease have a strong affinity for the nerve cells, it is important that the resisting power of this special tissue be of the highest. Therefore shocks, overfatigue, excitement and other things that may affect the vitality of the spinal cord and higher centers are to be avoided. Of course many of you will say that all this is nothing new and does not relate particularly to this disease. True enough. It does refer to all diseases wherein germ invaders are to be resisted. Traumatism, previous contagious diseases, and general debility have all been mentioned as secondary exciting causes. To sum up briefly, however, it may be said that the actual cause is a certain bacillus finding favorable soil to propagate on with the resultant fearful effect upon the unfortunate host. As I stated in a previous paper in every case a secondary exciting cause cannot always be found. The happy and, to all outward appearances, healthy child of this hour is a victim to an attack in the next hour. The disease is no respecter of creed, social condition, race or color, although in regard to color I must confess I have seen personally very few of the negro race affected, and certainly in proportion the white race is by far the heavier sufferer. The rich man's family and the children of the poor alike are to be counted among the victims of this terrible disease. Reports seem to indicate that more males are attacked than are females and that one attack does not necessarily confer immunity to the disease, although second attacks are rare. There are many instances where the disease has been present at the same time in various members of a family in all degrees of

severity from the fatal type to the very lightest degree known. It is during the first three years of life that children seem most susceptible to the disease although older children and even adults are by no means exempt as our own recent epidemics have shown. From my own observations I should say that from nine months of age to the end of the second year of life is the most susceptible period. Most observers agree that the second year of life furnishes the most cases. Nurslings are by no means exempt. In 1912 there was 507 cases reported to the New York City Board of Health, with 57 deaths. This indicates a mortality of slightly over 11 per cent. This is probably higher than the actual death rate because the reporting of this disease is a comparatively new order and there is not much doubt that many cases which recovered, so far as life goes, were never reported. It is interesting to note the Board of Health figures so far as nationality goes. Forty per cent of the cases came from Jewish families of various European mainland countries; twenty-five per cent of the cases were designated as American; twenty per cent as Italian; eight per cent as Irish, and the small balance—7 per cent—were divided among Germans, English, French, and West Indians. As is usual the congested districts furnished the greatest number of cases, but by no means all of them.

The season for this disease is all the year around—in other words at present we can say it is epidemic in our country or at least certain parts of it. When it becomes epidemic it is usually in the time of the year included from May to October. Some of our worst cases are met with, however, during the endemic seasons, so we must constantly be on the alert to recognize it.

The time allotted to this subject—20 minutes—will not permit the introduction of any pathology into my paper. To those of you who would like to read an interesting and instructive paper on this phase of the disease, I would call to your attention one by Peabody, of New York, published in the *New York State Journal of Medicine*, June, 1912. For the reason just stated the bacteriology of the disease, or the little we know of it, must also be omitted except to mention that it is through the nasal cavity that the bacteria seem to find their entrance into the body for their deadly work and while these bacteria are very resistant to things that destroy germ life, they are peculiarly susceptible to heat, 1 per cent hydrogen peroxide solution, menthol, etc.

In speaking of the onset and symptoms of this disease, I wish I could be very definite. Unfortunately for our little ones our knowledge here is woefully small and uncertain. In experiments done on monkeys an average incubation period of from seven days to a week and a half has been noted. Some cases in these various series, however, developed in as short a time as two days, whereas in others as much as a month passed before the experimentally induced disease manifested itself. In human beings, lack of definite data on the subject has prevented the arriving at any positive conclusion as to the time of incubation. This unfortunate state of affairs will, I hope, soon be cleared up, for with definite knowledge, an aid to the prevention of the spread of the disease would be in our hands and also a deal of uncertainty and worry done away with. Some writers speak of a prodromal stage, but the signs and symptoms mentioned would, in most cases, at least, answer

for several diseases or increase largely the so-called abortive cases in which the patients have all the signs and symptoms of the disease but escape the paralysis. Of course about the only way of proving the abortive cases where not even an apparent muscle weakness develops anywhere temporarily or transient paralysis is present, would be by a lumbar puncture, for in the spinal fluid are certain changes seemingly caused by this disease. But that this is the only way we know of to date is rather unfortunate, for parents will not permit us to do lumbar puncture on their children *ad libitum*, nor would we wish to do it. On the other hand if abortive cases are able to and do spread the disease, then we ought to know positively whether or not a child whom we were suspicious of did have the disease so we could make some effort at protecting other children. You see what a hard problem it is to face. Usually the only time a lumbar puncture is done now is when the physician wants to arrive at a decision between this disease, epidemic cerebro-spinal meningitis and tuberculous meningitis, a decision not always easy to make. In the disease under discussion the spinal fluid is usually clear or only very slightly clouded. It will reduce Fehling's solution. The globulin content of the fluid shows a gradually increasing percentage, depending upon the stage of the disease when the fluid is withdrawn. After a period of about eighteen to twenty days the percentage returns to normal. An early polymorphonuclear leukocytosis is followed within a day or two by a lymphocytosis. No organism can be demonstrated in this fluid by our present methods. This latter fact is very important as a sign of poliomyelitis as against epidemic cerebro-spinal fever. It has also been stated that clot formation is not so marked in the fluid of this disease as in the spinal fluid of a tuberculous meningitis. The onset is usually abrupt and figuratively speaking "out of a clear sky." In some cases children have had an obstinate constipation before the trouble but in just as many cases an intractable diarrhoea has existed. In some there has been some slight catarrhal trouble, nasal or otherwise, which did not yield readily to the usual treatment. In many cases there has been no real or fancied predisposing cause or symptom and in fact no apparent onset or course of the disease. The patient has just been found to be paralyzed, the paralysis coming on suddenly and without warning. A well child at night is found to be a paralyzed child in the morning. The usual history given, however, includes some or all of the following symptoms: diarrhoea, constipation, fever, which is usually described as very high, but need not be so, severe headache, chill followed by profuse sweating, which may be general or only in spots, vomiting, restlessness, delirium or apathy, the latter being the more common. Hyperesthesia over the entire body or any part of it is a most important symptom when present, and it usually is, and is a very significant aid to early diagnosis. Joints and muscles may be painful but the fact that the pain is usually worse at night is of no help in the diagnosis. In the old simple anterior poliomyelitis, by which I mean the type of the disease in which the cord only is affected by the toxins of the infection, we had no fatalities, but now that we have learned to recognize that the disease need not necessarily be confined to the cord but may travel upwards into the brain, we know that with this disease we may

have severe and fatal cases. We may have high temperatures, extreme prostration, unconsciousness, delirium, and convulsions.

As the disease travels upwards symptoms develop depending upon the centers affected by the invasion. Wickman classifies this disease as follows: (a) ordinary spinal paralysis or simple anterior poliomyelitis; (b) progressive paralysis, usually ascending, less often descending; Landry paralysis; (c) bulbar paralysis; polioencephalitis of the pons; (d) acute encephalitis, giving spastic monoplegia; (e) ataxic form; (f) polyneuritic; multiple neuritic type; (g) meningitic form; (h) abortive form. In a recent paper from the Rockefeller Institute, their classification was as follows: (a) usual type; (b) cases without prodromata in which paralysis was the first symptom; (c) cases with remission of symptoms and delayed paralysis; (d) cases with deep stupor. At the present time Wickman's classification is the one most generally accepted. In a previous paper I gave examples of cases coming under each of these heads but lack of time will prevent a repetition here. Now what, therefore, are we to base a possible diagnosis on before the actual paralysis occurs at which stage the parents will likewise be able to make the diagnosis? It is no easy task to designate this positively, but I think the following are fairly reliable: Sudden attack of moderately high fever with or without vomiting, from no apparent cause, particularly if the disease is prevalent or cases have occurred in the neighborhood. Of course a history of exposure to the disease would make one very suspicious; an unexplainable diarrhœa or a sudden attack of constipation; any or all of the above, plus apathy, restlessness, delirium, or convulsions, and a *slight or marked hyperesthesia* in spots or over the entire body and extremities. An early diminution of reflexes in whole or in part is likewise suspicious. The trio of symptoms, irritability, sweating and hyperesthesia, is suggestive, and in fact is considered by many diagnostic. It is far from constant, however, and of the three the hyperesthesia is, to my mind, the most significant and important. Just because you don't make a positive diagnosis, however, do not hesitate in giving early treatment, and the moment paralysis appears protect your patient from contractions and deformities. What I mean by early treatment I will explain later. In making your diagnosis in acute or chronic cases you will have to rule out several other conditions and diseases. The principal ones to be borne in mind are tuberculous meningitis, epidemic cerebrospinal fever, palsies of cerebral origin, transverse myelitis, Pott's paraplegia, spastic spinal paraplegia, multiple neuritis, Erb's palsy, diphtheritic paralysis, scurvy, acute rheumatism and other joint conditions. In giving a prognosis in any of these cases, whether in the acute or chronic stage, be guarded. In the simple type where the cord only is involved your outlook as to life is naturally good. Where the higher centers have become involved in the process your prognosis is not good and yet many of these cases recover so far as life is concerned. I have already stated to you the mortality rate of the disease. Very fortunately the amount of the original paralysis in any given case is not the amount that is going to be permanent, for this latter result depends on the actual amount of permanent damage done in the cord and also on how well the patient is treated during the stage of recovery. I am not a believer in putting very much work on the sick spinal

cord too soon, but remember there is no "too soon" in taking steps to prevent contraction and deformities, and with all that has been said on the subject by various writers there is no excuse for any physician failing to do so. In the course of an acute case if the paralysis halts for from twenty-four hours to thirty hours it usually indicates that the limit of the paralysis has been reached and from then on "a recession of the tide" can be expected. You can partially base your estimate on how much of the paralysis is going to be permanent by the following facts: The loss of faradic irritability at once in a muscle means a bad prognosis so far as that muscle is concerned. The more gradual and the later the loss of faradic irritability the better the prognosis for ultimate recovery. As the faradic current fails to act the galvanic current should be used. In the normal muscle the greatest reaction is at the closing of the negative pole. In paralyzed muscle the reaction is slower, requires greater stimulation and the contraction is greater at the closing of the positive pole. Muscles giving this reaction of degeneration are those in which a permanent deficiency may be expected. The better and the more persistent your treatment the better your prognosis may be.

Even at the risk of a rebuke from our chairman for going over my allotted time, I want to say something about prophylaxis before taking up treatment. Everything that can be done to prevent the spread of the disease should be done promptly. Every suspicious case should be quarantined at once. If it proves positive at least a three weeks' quarantine should be maintained and the child not be permitted to mingle with other children immediately the acute stage is passed. For its general antiseptic effect hexamethylenamine should be given in full doses depending upon the age of the patient. The stools are best treated as in typhoid fever and the nasal passages and the throat should be most carefully sprayed with one of the solutions I have already mentioned as a destroyer of this invading host. Nasal secretions should be received into paper handkerchiefs which are immediately burned. Expectations should be into some vessel which should contain a destroying solution. To me it seems as if all bedding, bed clothes, toys, books, and other things handled by the patient should receive the same treatment as would be accorded to them in any other infectious disease. The doctor should be attired as he would in making calls on like diseases, and when he is leaving his patient he should "scrub up." The one who is looking after the patient at home should take like precautions. After the quarantine has been raised the place where the patient was should receive a thorough disinfection. The neighbors should be informed of the presence of the disease by a placard on the floor. If you are the physician to a family in the neighborhood where this horrible disease makes its appearance you should instruct the families whose medical adviser you are to institute a daily nasal spraying with proper antiseptic and even perhaps a course of hexamethylenamine should be given. Of course it goes without saying almost that a thorough cleaning out of the gastro-intestinal tract is advised. I now come perhaps to what is the most important part of my paper—treatment—and it is here where the family physician can earn the everlasting thanks of the family if he only will. The keynote to success in the treatment of this affliction is care and persistence. Only those who

have handled hundreds and hundreds of these cases can appreciate how emphatic I want to make this statement. It is only by being persistent that you get anywhere at all. Do not think that your duty is finished after your patient has passed through the acute stage safely. By your own attitude towards the case show them how necessary persistence is and don't send them to the specialist without advising them that his treatment will be a long one. And, above all, don't advise or permit early surgical interference. This, it seems to me, is nothing less than a crime. In every case a certain amount of improvement takes place, no matter what the treatment, if only nature is allowed to take her course. Just bear this in mind when you think you have discovered a new and rapid treatment or someone suggests early surgical interference to you. How long this spontaneous recovery will go on is hard to say, likewise whether it will be quick or slow. But practically it happens in every case even though in some it may be a little late in starting. To return to the acute stage. Your first endeavors will be to combat the various symptoms as they arise. You have no specific remedy to rely on and about the first thing you can do therefore is to arrange for the administration of full doses of hexamethylenamine with the idea that its action may have some antibacterial effect upon the invading host and limit the amount of the damage about to be done. While that order is being filled at the druggist an immediate dose of castor oil is given or a good sized amount of calomel is started in divided doses of small amount. Complete cartharsis is desirable, so when you use castor oil give it in a sufficient quantity to bring about a proper effect. Clean out the nasal passages and throat. For the nervous symptoms and hyperesthesia you can use the bromides or like drugs. Counter-irritation to the spine has been used for years and still is. The reason for it is not clear in view of our present knowledge of the pathology of the disease. Blood clotting drugs, by which I mean drugs that will cause a quickening of the normal time for the clotting of the blood and thereby tend to stop its spread after the hemorrhage has taken place, are indicated. I am at present trying to make out a list of these. I am absolutely opposed to the practice of some men who put the affected parts up in plaster of Paris and thereby "lock" them in. What you must do is to take the affected parts, wrap them up carefully in cotton, put them in a position of partial overcorrection and hold them there with light splints so that the well muscles cannot distort or deform them by working against the entirely paralyzed or partially weakened muscles. Even the pressure of the bed clothes should be avoided by using a cradle over the bed. When the patient is ready to leave the bed the limbs should be supported by proper braces. This is very essential and should never be neglected, for if it is deformity and contracture is bound to occur. As soon as the pain permits, gentle massage and passive motion should be started. No matter how much you believe in electricity, do not start it very early. It will do no good and may do plenty of harm. In the early part of the chronic stage the child should wear the braces continually, but later on they can be taken off for a limited number of hours every day. At night, if the braces are not kept on, splints should be applied to protect against contracture and deformity while the patient sleeps. The style of the brace to be applied is not such

as will take the place of the impaired musculature so far as action goes but to render the proper amount of support and also to protect against deformity and contracture. The gentle massage should gradually be supplanted by regular massage and vibration. It should be given once or twice daily if possible and certainly not less than three times a week. It should be given by an expert, if possible, who should give the mother some instruction in it to be used on the days or at the times when the expert treatment is not given. The supervision of the physician should be constant and interested. To get anywhere in these cases you must have patience, perseverance, good, constant, steady treatment and home coöperation. I omit anything about the surgical treatment for two good reasons: In twenty minutes one cannot discuss the ordinary aspects of the disease and the surgical treatment in itself would be almost a book. In this brief paper, giving but an outline of the facts of this scourge of our beloved little ones, I am but making a plea to you to help save the little victims from being absolute cripples through neglect or a false idea that nothing can be done. Plenty can be done and much good accomplished by you directly, or indirectly, if you doubt your own ability, by sending these cases to the orthopedic surgeon as early as you can.

AUTOGENOUS VACCINE TREATMENT OF SIXTEEN CASES OF CHRONIC RHEUMATISM.

Horace Greeley, M.D.,

of Brooklyn, N. Y.

AS a contribution to the literature evidencing the great and unique value of autogenous vaccines in chronic, localized infections, I offer the following table, giving the details of such treatment in sixteen cases of chronic rheumatism, which I have handled during the past year.

First considering the bacteriology of the cases detailed, I call attention to the presence on the fauces of all of the sixteen of the long-chained streptococcus. This organism was also found by centrifuging 10 cc. of urine aseptically obtained from each case and inoculating therewith a plate culture. Of the ten cases in which a blood culture was made, during an attack, five showed the same organism. The blood was not examined in the remaining six cases as experience with the others had indicated the identity of the faucial streptococcus with that causing the joint trouble,—an identification chiefly justified, I think, by observations made in the five cases giving positive blood cultures, and which were treated with a vaccine derived from this source. In these I had made weekly smears from the fauces, the first of which (before vaccine treatment had been commenced), showed great numbers of epithelial cells almost covered with whorls of large and most vigorous streptococci, and practically no polymorphonuclear leukocytes; the second, a week later, showed the same organisms, which, however, were much reduced in numbers and length of chain formation, together with a few polymorphonuclear leukocytes. Continued observations proved these changes to be progressive till great numbers of such leukocytes were found and the remaining organisms had entirely

Case.	Age.	Recurrent Polyarthrit.		Single joint involved, slight or no swelling.	Associated temperature elevation.	Chronic duration, years.	Long-chained streptococcus found.			Vaccine from	First dose of 100 million, anal of millions.	Total doses given.	Local reaction—Puncture.	Acute duration, Days.	Focal reaction—Joints.	Duration, days.	Temp. elevation—Degrees.	Duration, days.	Period since last injection—months.
		With Swelling.	Without Swelling.				Blood.	Fauces.	Urine.										
M. E.	36	x	..	..	1.5 F	3	x	x	x	Blood	7,500	9	xx	3	x	1	2.0 F	2	6
I. F.	47	x	..	..	1.0 F	2	x	x	x	Blood	1,250	5	x	5	xxx	7	2.0 F	5	4
M. M.	64	xxx	..	..	1.0 F	10	x	x	x	Blood	15,000	9	xxx	5	x	1	3.0 F	5	8
H. W. P.	26	..	x	..	?	1	—	x	x	Urine	5,500	4	x	1	—	—	—	—	7
M. W.	48	..	..	x	—	1/2	—	x	x	Fauces	400	3	x	1	—	—	1.0 F	1	5
E. M.	37	..	..	x	—	1	—	x	x	Fauces	5,500	4	x	1	—	—	1.0 F	1	6
B. F.	33	..	..	x	—	1	—	x	x	Fauces	5,500	4	x	1	—	—	1.0 F	1	4
E. L.	40	x	..	..	1.5 F	4	x	x	x	Blood	1,250	5	x	2	x	1	1.5 F	2	4
B. C.	54	..	x	..	1.0 F	1	—	x	x	Fauces	1,250	5	x	1	x	1	1.0 F	1	6
F. O. L.	70	x	..	..	—	16	x	x	x	Blood	7,500	9	x	2	x	2	2.0 F	2	4
J. W.	50	..	x	..	—	1	?	x	x	Fauces	400	3	x	1	x	1	1.0 F	1	3
N. D.	49	x	..	..	1.0 F	2	?	x	x	Fauces	800	4	x	1	—	—	1.0 F	1	4
O. R.	28	x	..	..	2.0 F	4	?	x	x	Fauces	800	4	x	2	—	—	2.0 F	3	3
K. F.	36	x	..	..	1.0 F	2	?	x	x	Fauces	1,600	5	x	2	—	—	2.0 F	3	2
A. C.	60	xx	..	..	0.5 F	10	?	x	x	Fauces	3,200	6	xx	4	x	3	2.0 F	3	1
M. A.	40	x	..	..	0.5 F	3	?	x	x	Fauces	6,400	7	xx	3	x	3	2.0 F	2	3

NOTE: The sign *x* is used to indicate presence of condition described at head of column; where it is repeated, a greater intensity of this condition is represented. *Sign* — indicates *absence* of the phenomenon. Each reaction tabulated is the severest that the case presented. *Local* varied from slight swelling, with areola of 1/2-inch diameter (x) to elevation of 2 inches, with areola of 4-5 inches width (xxx). No abscess developed in any case. Focal from slight ache (x) to severe joint pain (xxx).

lost their chain formation; appearing in singles or doubles, with a marked development of capsule, the latter rivalling the heaviest armor ever displayed by the pneumococcus. Furthermore, in two of these five positive blood-culture cases my vaccine gave out and was renewed with another, prepared from the pharyngeal organism, and treatment continued with this gave reactions and results identical with those from the first preparation. All vaccines were grown on ascites-agar and killed at 60° C.—1 hour—.

The uniformity with which I found the organism in the urine suggests that, in any body-infection, one might catch a fish worth while by such an easy cast as a urine culture makes. The urine is known to be but slightly, if at all, bactericidal while the blood, when shed, is distinctly so and may certainly interfere with the development of any bacterial passenger for whose digestion the existing infection has directly stimulated it.

In vaccine administration it will be noted that I was what the homeopathists call a true allopath and gave what are usually accounted heroic doses, but in all, except one instance, the local reactions were moderate. This case was that of an old lady (M. M.) skeptical of the treatment, who had both knees badly stiffened and swollen, and who declared that she must be cured quickly or not at all, but that she had no objection to any accompanying pain or discomfort. Her last two doses 10,000 million and 15,000 million produced base-ball sized swellings at point of injection, on arm and leg respectively, which were several weeks in subsiding, although the areola surrounding the punctures disappeared within five days. Three hours after each of these doses she experienced chilly sensations and her temperature rose 3 degrees Fahr., gradually subsiding in five days. This was a case, quite frequent in the series, in which, while tonsillitis was rarely suffered from, the fauces presented a dark purple color, and, on microscopic examination, the most massive growth of long-chained streptococci which gradually broke up as immunization progressed till a few of the capsulated form, referred to, alone remained.

I, all along, feared severe focal congestion, but in only one instance did this appear, and that was in the case of (I. F.) in which the fifth injection (1250 million) was followed within 24 hours by the most painful attack of joint pain ever experienced by the patient who was compelled to remain in bed, almost sleepless, for seven days. The attack developed in the shoulder (this had not previously been involved) above the point of injection and the pain continued in spite of ice-bags (heat seemed to render the pain more intense) until the moderate swelling about the puncture had subsided. The joint did not swell and was alone involved. This patient would not permit another injection but has remained without an attack for the past six months, while previously, for two years or so, more or less constant pains in hands and knees had been experienced.

The constitutional reaction, as evidenced by the temperature, with all except the old lady mentioned never rose more than 2 deg. F. and usually entirely disappeared within 48 hours. With the exception of the two cases (M. M. and I. F.) one with severe local reaction undoubtedly avoidable with a more moderate dose, and the other in which an acute focal development appeared, none of the patients were subjected to but slight discomfort, and all,

I am sure, owe a long respite, if not a cure, to the vaccine treatment. During the time since last injection only one (F. O. L.) has had a recurrence—a very slight attack lasting two days.

I am impressed with the necessity of a longer interval than is usually allowed between doses, and think that even the seven days accorded to all of the foregoing cases could, in most instances, have been advantageously made ten. This longer interval is in accordance with facts deduced by various investigators from animal experimentation and gives the reactive mechanism time for a full return swing, a swing beyond its former farthest point,—if our inoculum be of the right kind and in proper proportion,—while if we repeat the dose too soon we may check the pendulum of reaction on its way, or even arrest it altogether. For success we must catch the pendulum at its turning point and give it another push. As to the number of doses to be given and their size I am somewhat in the dark, but we must remember that the body's reactive power is limited, and therefore must not push the quantity too far, lest the immunity-developing powers be swamped with an over-dose and permanently injured, a possibility well demonstrated in many animal-immunity-experiment cases reported. Yet, as 200 or 300 million of such organisms are commonly used successfully in the immunization of such small animals as Guinea-pigs and rabbits, it seems to me hardly worth while to begin with a smaller one, in the case of man, especially where the existence of chronic local infections have already certainly produced some special immunity. Any dose to be of marked benefit must produce a noticeable reaction, and though that one producing the greatest reaction, theoretically does the most good, in attempting such we easily overstep the safety line and produce a prolonged depression of the patient's special resistance,—his ability for par-enteral digestion of the specific microbe. Still successive doses should be increased to what seems the greatest compatible, with a tolerable reaction. If it is possible (as it was with most of the above patients) to double the dose on successive occasions we surely have our maximum of safe increase, and also limit the total number of injections, as reason, if not actual experience, instructs us that the tissues' power to digest must have a limit, not very far above that developed in naturally acquired infection. Therefore, if, in a case of chronic rheumatism, the patient shows a marked reaction, subsiding within twenty-four hours, to the safe initial dose of 100 million, we can presume that this was digested by enzymes already on hand, and when we have increased these enzymes by the stimulation of vaccine treatment so that they can likewise act on one hundred times that quantity we have reached the goal, at least of present knowledge—reason.



EXPOSE OF QUACKS IN NEW YORK AND LEGISLATION INAUGURATED—WITH CHART DEMONSTRATION.*

By B. S. Barringer, M.D.,
of New York.

AFTER the scientific papers which have preceded me, I have some hesitation in talking to your Society on quack doctors. Yet it is a very vital subject, and I am indebted to your President for the opportunity of saying a few words on what we have been doing in the Department of Health in this matter.

If you will allow me, I have just a word to say about the attitude of the Department of Health and the duties of the Medical Advisor in the Department of Health. I come as the bearer of an olive branch. I understand that a certain amount of criticism has been voiced concerning the position and activities of the Department of Health in the venereal diseases and the position of Medical Advisor.

Some time ago, July, 1913, the Department of Health with the assistance of the Bureau of Municipal Research, following the example of Portland, Oregon, established the position of Medical Advisor to the Venereal Division. Now, the duty of such an Advisor is to act as a clearing-house for patients who have no physician, and who come to the Department of Health. Such patients are given lists of private physicians or sent to dispensaries, according to their circumstances.

The Medical Advisor under no circumstances has anything to do with patients recommended by physicians to the Department, for the purpose of having Wassermann or Complement Fixation Tests made, unless the physicians sending such patients specifically ask that such patients be advised, directed to clinics, etc.

I would like to say just a word about our advertisement in the Evening Telegram. We started out to combat the quacks. No one has ever tried very hard to do that in New York; so we took the daily paper which had the most quack advertising, the Evening Telegram, and simply placed in it the following "ad":—

"Free advice regarding venereal diseases can be obtained at the Department of Health, 149 Centre St., Room No. 802, on Mondays, Wednesdays, and Fridays, from 2 to 4 P.M., and on Tuesdays, Thursdays, and Saturdays, from 9 to 11 A.M. All consultations strictly confidential."

Of those patients that came to us from that "ad", I think 90 per cent have been treated by from one to fifteen quacks.

Now, about the quacks. The exhibit which is being passed around represents possibly one-half, possibly more, of the venereal advertisements in New York. On the attached yellow slip you will find the approximated cost of such "ads" per year. The list of the different papers carrying venereal "ads", and the approximated cost of such "ads" is as follows:—

Amerikai Magyar	\$3,840.00	a year
Wahreit	2,920.00	" "
Jewish Daily News	620.00	" "
New Yorske Listy	280.00	" "
Giornale Italiano	6,022.00	" "

* Read before the Medical Society of the County of Kings, February 17, 1914.

Abendblatt	\$5,166.00	a year
New Yorker Herold	2,268.00	" "
Elore	932.00	" "
Szabadsag (Liberty)	8,993.00	" "
Deutsches Journal	18,060.00	" "
Progresso-Ital. Amer.	10,575.00	" "
Araldo Italiano	6,720.00	" "
Chief	236.00	" "
Telegram (Evening)	18,000.00	" "
Police Gazette	19,696.00	" "
Illustrated Record	1,404.00	" "

Approximately \$105,000.00 a year is spent for venereal "ads" in these sixteen papers and this only represents a part of the newspaper advertising in New York. Besides, we have the rent paid for anatomical museums, the cost of printing pamphlets, the wages of cappers, etc.

I have extracted a few of the promises in these "ads":—

"I attend to you until you are fully cured (of Syphilis) for \$5.00."

"You pay only if cured."

"We guarantee to cure every man with any private disease for \$10.00."

"\$10,000.00 reward for any case of lost manhood that cannot be restored."

"We guarantee to cure everybody."

"Four bottles of this medicine guaranteed to cure Syphilis."

I would like to read to you four short histories of cases which have come under our personal observation at the Department of Health.

"J. D.:—Two and a half years ago he went to Dr. C. (who advertises in toilets) to be treated for gonorrhea. He was treated for twenty weeks. He paid \$40.00; was not cured. Now he went to Dr. L., who advertises in most foreign papers and who has a so-called anatomical museum. This doctor charged him \$35.00 for a cure. The patient stayed with him fifteen weeks; was not cured, and Dr. L. suggested that he pay extra money for a cure, which he did for a number of visits. He now went to a druggist who advertises in the Russian papers and paid \$4.00 a week for twenty weeks. Not cured, he went to another drug company on the Bowery, where he paid \$10.00 down and from \$1.25 to \$2.00 a week for treatment. After going to them for a number of weeks and apparently not being cured, they asked him for \$25.00 for a guarantee to cure his gonorrhea. The patient gave them \$15.00 and he is now being treated. A blood test at the Department of Health showed that he had no gonorrhea.

"J. F. R. has had Syphilis for twelve years. He went for treatment to Dr. A., who has an office over an anatomical museum. He gave the doctor \$60.00 to begin treatment and paid \$2.00 a week for medicine. He sometimes did not take the whole bottle during the week, so the doctor insisted that he use a larger spoon. Then he went to Dr. S., who took \$85.00 for two injections of '606', although he said he would give the two for \$65.00. The first one did the patient so much good that the doctor raised the price \$20.00. He discharged the patient as cured and did not even

attempt to take a blood examination. The Board of Health examination shows that he still has Syphilis.

"A patient went to Dr. A. (who advertises in the daily papers) and was treated for two months for gonorrhea. He paid Dr. A. \$10.00 down and \$2.00 a week. He left Dr. A. for Dr. B., who stated that gonorrhea was in his blood and he needed an injection of vaccine and that such would cost him \$125.00. As Dr. B. advertises, 'Not a cent need be paid until cured,' the patient reminded him, (as several others have told me they have also done), of his statement. Dr. B. thereupon stated that he did not know the patient, but Dr. B. would treat him if the patient would put the \$125.00 in the bank, (of which Dr. B. claimed to be a director), in a joint account under Dr. B.'s name and the patient's, the money going to Dr. B. when he was cured.

"When the patient demurred to this, Dr B. offered to treat him for \$5.00 a week. At the Department of Health a test of his blood (gonorrheal complement fixation test) showed that he had absolutely no gonorrheal infection.

"Another patient had Syphilis for seven years. For two years he was treated by an advertising quack in Hartford, to whom he paid between \$200.00 and \$300.00. He then came to a 'medical institute' in New York and paid \$50.00 more for treatment. Then he went back to the Hartford quack for more treatment and thence to Waterbury to another advertising quack. Finally, he came to Dr. A. in New York, who advertises that he gives '606'. This patient says Dr. A. stuck a needle into his arm and while pretending to inject a solution of '606', allowed the solution, (undoubtedly simply colored water), to run into a pail. For this performance Dr. A. charged \$15.00. Despite the fact that practically each of these quacks claim to have effected a cure, a large hospital in this city subsequently reported his blood as still showing Syphilis."

Now just a word about legislation against the quacks.

In Portland, Oregon, in 1913, they passed an ordinance by which they have eliminated the quacks with one or two insignificant exceptions. This ordinance reads:—

"Section 2095. Any person who shall advertise or publish any advertisement intended to imply or to be understood that he will restore manly vigor, treat or cure lost manhood, lost power, stricture, gonorrhœa, chronic discharges, gleet, varicocele or syphilis, or any person who shall advertise any medicine, medicinal preparation, remedy or prescription for any of the ailments or diseases enumerated in this act shall be deemed guilty of a misdemeanor and upon conviction thereof shall be punished by a fine of not less than \$100 nor more than \$1,000, or by imprisonment in the county jail for a period of not less than 6 months nor more than 12 months, or by both such fine and imprisonment. Any owner or managing officer of any newspaper in whose paper shall be printed or published any such advertisement as is described in this act shall be deemed guilty of a misdemeanor and upon conviction thereof shall be punished by a fine of not less than \$100 nor more than \$1,000, or by imprisonment in the county jail for a period of not less than 6 months, or by both such fine and imprisonment."

I understand that the constitutionality of this law has never been tested in the law courts. The advertising quacks are afraid of the publicity which such a test would mean. The law is cer-

tainly effective. I hope the time will come when such a law may be passed in New York State.

Because of the crusade of the Chicago Tribune and the efforts of the A. M. A., the following ordinance has been passed in Chicago, which reads:

"Be it ordained by the City Council of the City of Chicago:

"SECTION I. Any person, firm, corporation or association who, with intent to sell or in anywise dispose of merchandise, securities, service or anything offered directly or indirectly by such person, firm, corporation or association to the public for sale or distribution, or with intent to increase the consumption thereof, or induce the public in any manner to enter into any obligation relating thereto, or to acquire title thereto, or any interest therein, makes, publishes, disseminates, circulates or places before the public, or causes directly or indirectly to be made, published, disseminated, circulated or placed before the public, in this City, in any newspaper or other publication sold or offered for sale upon any public street, sidewalk or other public place, or on any sign upon any street, sidewalk, or public ground, or in any handbill or advertisement posted upon any street, sidewalk or public ground, or on any placard, advertisement or handbill exhibited or carried in any street or public ground, or upon any sidewalk or any banner or sign flying across the street or from any house, an advertisement of any sort, regarding merchandise, securities, service, or anything so offered to the public, which advertisement contains assertion, representation, or statement which is untrue, deceptive or misleading, shall be fined not less than twenty-five (\$25.00) dollars nor more than two hundred (\$200.00) dollars for each offense."

The Honorable W. H. Chorosh of the New York Board of Aldermen has introduced an ordinance similar to the Chicago one. The first public hearing on this ordinance is to take place on next Friday, February 20th, 1914, at the City Hall. I hope that it will be possible for a representative of the Kings County Medical Society to appear at that hearing and support not only the Department of Health, but the various medical societies and sex hygiene associations.

One word about the present laws and why they do not work out. There is a law by which the Regents of the State of New York can revoke the licenses of practitioners if they are guilty of fraud, deceit, etc. Why that has never worked out in eliminating quacks who make their living by means of misleading and deceptive advertisements, I do not exactly know. I presume that legal proof of deceit and fraud is difficult. Why the penal code is not effective, only a lawyer can tell. I think that the main value of the ordinance contemplated by the New York Board of Aldermen will not be the prosecutions which will take place under it, but will be the publicity which it will give to the deceptive quack advertising.

The Department of Health is trying to get one of the prominent daily newspapers to start a publicity crusade similar to that of the Chicago Tribune. With this started, with the above ordinance on the books, and with all of the medical societies working together, the quacks will begin to seek cover.



EDITORIAL



ASSAULTS ON THE LICENSE TO PRACTICE ACT.

THE usual outpouring of Bills permitting osteopaths and kindred manipulators of the human form to practice medicine is again in evidence. The list includes Bills which permit not only osteopaths, but so-called neuropaths and chiropractics to enjoy the privileges of medical practice without first obtaining a medical education. Being a free people we must, of course, expect that everyone, no matter what his qualifications may be, will demand the freedom to do what he likes, irrespective of his qualifications so to do. It is a natural corollary to each added requirement for a medical license that the uneducated should seek a short cut to enjoy its advantages without undergoing the training that wisdom and experience have shown to be essential for those who would undertake the care of their fellow men. The blatant advertisement of the chiropractic school, which publicly announces that no preliminary education is required and that the practitioner of this art may become qualified by home study, should, to the ordinary mind, stamp the sect for what it really is. The same holds good for the other schools. Whatever virtue may be inherent in the methods of treatment employed by these sects should be utilized only by those who are amply qualified to understand the limitations of their practice: manipulation may produce good results, but it may, and often does, work lasting harm when applied in inappropriate cases.

The State very wisely has placed limitations upon plumbers, requiring that only those who have been adequately trained shall be permitted to undertake the proper care of faulty water supply in order that bunglers may be prevented from working harm to valuable property. The man who patches your water pipe is supposed to be able to make a diagnosis of the trouble before he is permitted to remedy it. The physician who fails to make a satisfactory diagnosis is blamed as one unfit to practice medicine; but what provision is made in the curriculums of any of those so-called schools for proper training in diagnosis? The trained physician, after four years in the medical school, which he may only enter after a careful preliminary training, must have hospital experience to fit him for ordinary practice, and after years of such practice freely admits his weakness as a diagnostician. The Bar requires careful training, practical as well as theoretical, before it grants the right to practice in the courts. Plumbers and lawyers deal with matters that do not directly affect the lives of those who employ them. The doctor assumes responsibility of life and death and is held accountable if inadequate to the task.

It seems incredible that any legislative body composed of intelligent men should seriously consider admitting to this respons-

ible calling any but those most carefully trained, and yet experience has shown that the claims of just such charlatans is seriously considered, for the Legislature in the past has granted broader privileges to the osteopaths and to the optometrists, and only the most strenuous efforts on the part of the medical profession has, so far, availed to prevent the removal of those barriers that are intended not to preserve the privileges of the physician, but to conserve the interests of the people as a whole. To any one who honestly desires to utilize the methods claimed as advantageous by these people, there is a ready means,—let him take a medical degree and qualify for special practice in his chosen art. Such a one will find that he is welcomed in the profession because he will be known to have qualified himself to know what *not* to do and will have removed a suspicion that now attaches to them all, that the real underlying motive is a short-hand way to make money at the expense of the credulous public.

H. G. W.

RURAL HEALTH.

CONSIDERABLE interest attaches to the Wheeler-Macdonald Rural Hygiene Bill, now before the Legislature, because of practical results which may be expected to follow from its enactment. It is pitifully true that rural hygiene is almost an unknown quantity. The first consideration in the placing of the barn and well is convenience, and not health. The same applies to the privy. There are, of course, practical considerations which influence the relative location of all these necessary outbuildings, but a deal of ignorance exists that, if swept away, would unquestionably diminish, greatly, the present rural death rate. Were one to take into consideration the question of enteric fevers alone, there can be no question that a proper appreciation of sub-soil drainage, and ordinary precautions as to sewage disposal, would practically eliminate them. As it is, at present, no account is taken in digging a well as to whether the drainage from the stable and from the privy will contaminate it or not, and, in the majority of instances, it seems cheaper and easier to dig a shallow well than to drive a deep one into water-bearing strata, not likely to be contaminated.

The present Bill provides for a Division of Rural Hygiene under the State Department of Health, which shall, by purely educational methods, bring the dwellers in rural districts to a full knowledge of how they may safeguard themselves, and incidentally those at a distance who, as consumers of milk, or Summer boarders, come into contact with them.

The economic side of the question appeals with striking force when some of the figures that have been covered on the subject are considered. For instance, the rural death rate in New York is 15.2 per 1,000 population, which affords the State the somewhat unenviable distinction of standing next to the top. Advocates of the Bill have estimated that the number of preventable deaths in the State last year was 3,900, which, figured at an arbitrary rate of \$5,000 per life, brings the loss in dollars, to the State, up to the astonishing figure of \$19,500,000.00! It may be reasonably questioned whether this method of turning human lives into dollars is

the right way to consider humanity, but it seems to appeal to certain minds, and if it shall prove a cogent argument in persuading our Legislators to pass the Bill, by all means, let us use it.

Ever since a vacation spent some years ago at a farm-house in Vermont, we have hesitated to eat pork for reasons that are not merely sentimental, and had we not known that the drinking water was piped from a spring further up the hillside, we would have endeavored to provide some other beverage, even though Vermont is a prohibition state. For economy and convenience together, the house was joined to the woodshed, woodshed to barn, barn to pigsty, and pigsty almost back to house, a veritable vicious circle. There was no cesspool except the pigsty: hence our distrust of pork. It may take some generations of education to remedy conditions so grossly foul, but the Wheeler-Macdonald Bill is a step in the right direction.

H. G. W.

THE EVIL THAT MEN DO LIVES AFTER THEM.

THROUGH the courtesy of Dr. H. F. Eichacker we were recently permitted to examine the account book of a merchant who kept a general store at one of the sea-port towns of Long Island in the early part of the last century. In turning the pages of the ancient Journal one is at once impressed by the fact that approximately one half of the entries are for alcoholic liquors. In fact, many of the inhabitants seem to have bought little else.

It occurred to us that it might be interesting to learn something of the progeny of these individuals. On making casual inquiry of a former resident we were informed that several members of the present generation are notorious alcoholics, and that practically all of these families have furnished several inmates for our local insane asylums during the past twenty-five years.

One Mary "Jones," of the same village, who was totally blind as a result of having once drunk wood-alcohol during a debauch, died recently, of nephritis, at the age of forty-five. The first page of her great-grandfather's account shows the following omnious entry:

JOHN "JONES."

1814		£	S.	D.
Oct. 7	1½ yds. Calico		4	6
Oct. 12	1 Quart Rum		3	6
Oct. 21	1 " "		3	6
Oct. 28	1 " "			
	1 Pint Brandy & 2 lbs. Sugar		6	6

BURTON HARRIS.



Obituaries



DEPARTMENT UNDER THE CHARGE OF WILLIAM SCHROEDER, M.D.

ON THE DEATH OF DR. GEORGE McNAUGHTON.

Remarks of Dr. Robert L. Dickinson before the Medical Society of the County of Kings, March 17, 1914.

IT is sadly fitting, Mr. President, that in this place, before this company, and from this rostrum, the first formal announcement of the death of DR. McNAUGHTON should take place, and the first public expression of our grief. For on this platform he presided longer, perhaps, than any other officer of a prominent medical body; and in this audience are very many of his dear friends and hearty admirers, with each and every member of it his debtor; for this building is his monument. It is hardly too much to say that the success and the adequate housing of this society was the dearest interest of his life. It was a worthy ambition, fairly carried to completion. No man less generous, less genial, less compelling could even with strong backing have gone on against all discouragements, and won—not from wealthy citizens, as in other cities, but from an underpaid profession—the means to give this dignified and comely home to our society. Who forgets the smiling wizardry with which he did it? Who has known a man more beloved of his patients, or more ready to break sleep or vacation—aye, a whole vacation—for one ill? If a true man radiates, as Holmes declares, six feet of geniality, here was one who radiated sixty. It is in this spirit that we can carry his influence forward, in sheer kindness, and devotion, and utter courtesy.

As a tribute to his memory I move a vote, a rising vote, of appreciation of his great service, and of condolence to be expressed to his family.

MATTHEW WINFIELD SMITH, M.D.

DR. SMITH was born sixty-eight years ago, and died in Brooklyn, N. Y., January 9, 1914, where he had lived during the greater part of his life. He was a graduate of Bellevue Hospital Medical College in the class of 1873. His practice was in that part of the city known as Flatbush. The funeral services were held at the Church of the Holy Innocents.

W. S., Sr.

CLEMENS F. FULDA, M.D.

DR. FULDA was born in Saxony, Germany, in 1846, and died in Brooklyn, N. Y., February 26, 1914. He graduated from the New York University, in 1878, and during his professional life was in the practice of medicine in the Greenpoint section of our city. He was a member of the New York Zoölogical Society; American Museum of Natural History, and the National Geographic Society. He leaves a

widow, Mary, and two sons, Harry Fulda, M.D., and Carl Fulda, M.D., also a daughter, Mrs. Carl Rungius.

W. S., Sr.

FRANCIS MARTIN BURKE, M.D.

DR. BURKE, son of Francis Burke and Susan Kerigan, was born in Brooklyn, N. Y., in 1862, where he died on March 3, 1914. He was educated at St. Francis Xavier's Academy, receiving the degree of M.D., from the New York University in 1890. This was followed by service in the City Hospital at Blackwell's Island, Chambers Street Hospital, New York Eye and Ear Hospital, and St. Bartholomew's Home, after which he began the practice of medicine in Greenpoint and continued in Flatbush.

He was a member of The Medical Society County of Kings, from 1900 to 1904, and Chapelle Council K. of C. He leaves a widow, Hannah Sheely, to whom he was married in 1895.

W. S., Sr.

STANLEY HOWARD MAC GILLVARY, M.D.

DR. MAC GILLVARY was born August 26, 1868, at Sidney, Cape Breton Island, Canada. He died in Brooklyn, N. Y., February 16, 1914. He was the son of Alexander D. Mac Gillvary and Bessie Mac Kenzie, both of Nova Scotia.

His medical education was received at Bellevue Hospital Medical College, graduating in 1890. During his professional life he was physician to the Vernon Home, New York; Long Island State Hospital, Manhattan State Hospital, and the New York School of Clinical Medicine.

A member of The Medical Society County of Kings from 1899; Associated Physicians of Long Island from 1900; and American Medical Association.

He is survived by his widow, Maud Preston, and one son, Donald Mac Gillvary.

W. S., Sr.

AMOS HENRY ELLIOT, M.D.

DR. ELLIOT was born December 4, 1840, at Mason, N. H., and died in Brooklyn, N. Y., December 12, 1913. His medical education was received at the New York Homeopathic Medical College, receiving the degree of M.D., in 1888. He was a member of Homeopathic Societies of the County of Kings and New York State, and the American Institute of Homœopathy. He leaves two daughters, Mrs. Bains and Mrs. Tulloch, of Flatbush.

W. S., Sr.

NORMAN EUGENE FAREWELL, M.D.

DR. FAREWELL was born in Ottawa, Canada, in 1876, and died in Brooklyn, N. Y., December 11, 1913. He was a graduate in medicine from Trinity Medical College, in the class of 1897; a member of the Medical Society County of Kings in 1903-04. During his professional life in this city he was assisting surgeon to the Brooklyn Eye and Ear Hospital, Williamsburgh Hospital, and the Bay Ridge Dispensary. He leaves a widow, Effie Belle.

W. S., Sr.



Society Transactions



TRANSACTIONS OF THE BROOKLYN SURGICAL SOCIETY.

Regular Meeting, Thursday, November 6, 1913.

The President, RUSSELL S. FOWLER, M.D., in the Chair.

Report of Cases.

1. N. P. Geis, M.D., Mayo Bunion Operation. Two cases.
2. E. H. Fiske, M.D.,
 - (a) Cases of Bone-graft for Fracture. Patients. Stereopticon demonstration.
Discussed by Dr. J. B. Bogart, Dr. Mathias E. Figueira and Dr. J. S. Wight.
 - (b) Fuerster's Operation of Rhizotomy. Patient. Stereopticon demonstration.
 - (c) Talma Operations. Patients.

Paper of the Evening.

Mathias E. Figueira, M.D., "Essential Hematuria."

Extensive Ulcer of the Stomach Simulating Carcinoma.

Reported by Russell Fowler, M.D.

Mr. J. E., age forty-three, presented himself for examination July 3, 1912, with the following history. For the past two years he has been unable to retain and digest meat; meat was vomited just as eaten, undigested. Food taken two or three days previously was vomited from time to time. For the past fifteen months there has been pain in the left hypochondrium, gnawing in character, coming on about a half hour after eating, and persisting for two or three hours, relieved by bicarbonate of soda. Until about six weeks ago the patient could retain food, except meat, fairly well, though vomiting on the average about once a week; recently nothing could be retained. The pain has become constant and increasing in severity. There has been increasing loss of flesh and strength. In appearance, the patient was cachectic. Physical examination showed no divergence from the normal; slightly icteroid appearance of the skin and an enormous tumor in the epigastrium and left hypochondrium which seemed to be a tumor of the stomach and transverse colon. A tentative diagnosis of inoperable carcinoma was made, but the patient was given the benefit of the doubt, and an exploratory laparotomy was made July 4th. A right rectus incision disclosed a large indurated mass involving the entire cardia and adherent to the surrounding structures. The case was thought to be an inoperable carcinoma and a jejunostomy was performed. The after-treatment consisted in the elevated head and trunk position and nothing by mouth for the first forty-eight hours. The patient was allowed a few ounces of water several times daily, either plain or with a little bicarbonate of soda. Feeding through the tube was begun at once. A good recovery ensued and the patient was discharged on the thirteenth day much improved.

Up to the first of January, 1913, this patient fed himself, for the most part, through the tube, though occasionally he would take broth, egg and milk, as well as water by mouth. There was no return of his old symptoms, no indigestion, and his health has steadily improved. He was able to perform his duties as manager in a factory and felt stronger and better than he had any time in the two years previous. During all this time the tube remained in situ. On the first of January, 1913, he indulged in a jollification with some friends and the tube was displaced. Finding it impossible to replace it the patient left it out, whereupon the abdominal opening closed in a few days. Since this time he has taken his ordinary food by mouth and has experienced no ill results. Examination of this patient two months after his operation showed that the tumor had

disappeared, the obvious conclusion being that the case was one of extensive ulceration of the stomach and not carcinoma.

This case is presented as an example of what a very slight amount of surgery may do for what appeared, at the outset, to be a hopeless case.

Mayo Bunion Operation. Two Cases.

Reported by N. P. Geis, M.D.

I sent for these patients, but they refused to come.

First case: Patient Mrs. K., age forty-five, June, 1909. This woman was walking with a limp, with the aid of two canes. She could not stand for any length of time and both great toes overlapped and touched the third toe of each foot. For two or three days a 70 per cent alcohol dressing was kept on the foot before operation, which consisted of a horseshoe incision, base at the sole line, over the metatarso-phalangeal joint, including the skin and subcutaneous tissue only. The flap was dissected down, to the base of the foot, and then a horseshoe incision was made over the joint to get the bursa, the base being at the phalanx, and the head of the metatarsal bone was removed. The edge was smoothed down and the bursa was inserted between the metatarsal and phalanx to form a new joint. Two plain, catgut sutures were used to hold it there. Silkworm gut to the skin, and a drain of silkworm gut through the opening made in the base of the flap. Dressings of alcohol, 70 per cent, were kept wet for seven days. The patient had primary union and walks without any limp with her shoes on, but has a slight limp with her shoes off. She has no pain.

Second case: Miss M., age fifteen. The great toe overlapped to the third toe on the left foot. She had three fistulous tracts, the skin was swollen, there was a partial dislocation and she walked with the aid of a cane. She was kept on an alcohol dressing for three days before operation; then the regular Mayo operation was done and now, she walks all right; without any trouble, and with no limp with her shoes on, but a slight limp without her shoes on, and has no pain.

I am sorry I could not show these patients.

Bone-Grafts in Fractures.

Reported by E. H. Fiske, M.D.

It is clinically and theoretically established that a bone-graft that is most satisfactory is one that is autogenous. A graft is safer and better when it is from the same individual into whose bone the graft is placed. An autogenous graft produces an earlier osteogenetic growth and a more certain union, for it has a greater stimulating influence upon the osteoblasts than an alien graft would have.

Bone-grafts that are autogenous can always be obtained from the osseous frame of the one to be grafted. They can be taken and used at once. They are fresh tissues. They are easily obtained.

We have no fear of infection of the patient via the graft. We may have every assurance that another individual is free from any general disease, yet the possibility of some latent disorder, such as syphilis, always exists. A graft from the host certainly eliminates this danger.

We feel, therefore, that a bone-graft should be autogenous.

That we must at times use operative measures in the reduction of fractures is unfortunately and positively true. Try as hard as we can, some cases must come to operation in order to obtain a good anatomical and functional result. At times we must use some means of holding the fragments in position after they have been reduced by the open method.

When the shaft of a long bone is to be retained in position after fracture, we believe the bone-graft, used as a dowel, to be the best.

An autogenous bone-graft used as a dowel is, in all respects, superior to ivory pegs, magnesium, or other metal pegs. It is not a foreign body; it is bone where we wish bone to grow. It is, moreover, an active, living, bone-producing dowel.

Cotton and Loder of Boston, in a recent issue of the *Journal of Surgery Gynecology and Obstetrics*, June, 1913, prove conclusively that an autogenous bone-graft does actually take part in the production of new bone. They show that during the first few days of the graft period, there is a disappearance of the bone corpuscles in the contiguous surfaces of both the graft and the host. Then follows a rapid and complete covering of the proximal surfaces of the bone ends, graft and host alike, by a layer of new endosteal bone. This, without loss of substance or marked foreign body action. They conclude that the new bone is formed by the activity of the entire contiguous surfaces of both host and graft. They demonstrate new endosteoblasts through the graft.

This differs from Murphy's conclusions, that the graft only acts as a scaffolding. He states that the graft possesses no osteogenetic power. That it merely serves as an osteogenetic conductive means. Cotton and Loder, by careful experimental and microscopic work, have proved to my satisfaction that their conclusions, as stated above, are correct. We know that bone cells will grow for a time if kept in a proper medium, taking their stimulation and sustenance from this artificial medium. Why should they not grow in the media of the normal tissue fluids in the body itself? I certainly believe that these grafts are active. Hass has shown that blood stimulates bone production. *Blue Book*, August, 1913.

Even though they were only passive scaffoldings, they are certainly more suitable conductors of osteogenetic cells than ivory pegs, or metal, or magnesia dowels.

All we have said applies with even greater force when we compare them with the metal plates; "Lane's plates." Besides, they are so easily used. The ease with which they can be cut, the simplicity with which they can be introduced into the medullary canals of the two fragments, is startling. No wide-stripping up of muscle and periosteum, no drill for screw holes, no cumbersome and inefficient bone clamps, and finally, no leaving of a foreign body in the wound.

The time consumed in cutting the graft is very short. The following calculations are taken from the time of beginning the skin incision to the complete suturing of same.

1st case	4-inch graft	20 min.	Hip	1.20 min.	both operations
2nd "	3½ "	12 "	"	1.12 "	" "
3rd "	3¾ "	15 "	"	1.03 "	" "
4th "	3 "	25 "	Tibia	1.07 "	" "
5th "	3 "	12 "	Femur	1 hr.	" "
6th "	6 "	22 "	Hum. & Tib.	59 min.	" "
7th "	3 "	18 "	Femur	1 hr.	" "

Average time 17 min.

Comparing the total time to the time consumed in plating you will find but a very few minutes, if any, advantage on the side of the plating operation. The two platings shown of humeri took respectively fifty-five and forty-eight minutes.

We all know that plates not infrequently have to be removed. We all know that many times they fail to procure union, at least prompt union. It is admitted by all who use plates, or have used them, and it has been our experience in the thirty-four cases we have so far plated, that union is almost always delayed. So common is it to be compelled to remove the plate that Lilienthal leaves a wire attached to his plates, so that after two or three weeks he can remove them himself. I have never heard of an autogenous graft failing or having to be removed. In all of our cases the grafts have taken and the union has been very prompt in all but one case, a nephritic, who left the hospital ten days after the grafting. Fractures are liable to occur, and have occurred long after the fracture has united where the plates have been used, the fracture taking place at some of the screw holes, the prolonged presence of the screw producing a weak spot in the bone. No such weakening effect can follow the use of a graft.

The objection to the graft method is the additional wound made necessary for the cutting of the graft. If we follow the proper technic we will have no infections. That technic is a positive absence, at all times, and without any exceptions, of the gloved hand or finger, or even hand-sponge from the wound. Only sterile instruments should enter these wounds, and very few of them. Not one of our wounds, either of cutting or placing the graft, showed any infection, and not a single break in the technic above described occurred.

Eliminating infection, there is no other reasonable objection to this wound. They heal very rapidly. The bone fills in the defect very quickly, leaving no permanent defect or weakness. The drilling, the clamping, the bone denudation, the slipping screw-driver, and finally, the foreign body left in the wound, are all essentials of Lane's plating. None of them occur when a graft is used. Above all, we have every reason to believe that the graft is an active bone-building, bone-producing entity.

Case No. 1. Spinal root section. Cerebral spastic diplegia.

Pascual V., Kings County Hospital, age seven, Italian parentage.

History:—Unsatisfactory; parents not very intelligent.

Condition dates from infancy. Was transferred from Dr. Browning's service. Boy walks with great difficulty, putting one foot in front of the other; in other words, he crosses his feet when he attempts to walk. Reflexes are all greatly exaggerated; stroking the sole of foot throws the whole body into

extreme contraction. Patella reflex greatly exaggerated on both sides. Ankle clonus very marked. It is almost impossible for the child to walk. The adductor spasm crosses the legs when he endeavors to do so. Mentality poor.

Operation:—Under stovain anesthesia, between the 2nd and 3rd lumbar vertebra. A unilateral laminectomy was performed. The left lamina of the 1st, 2nd, 3rd, 4th and 5th lumbar vertebra were removed with rongeur forceps, giving an opening 1 CM., in width. The dura was incised along the middle line and held up by mosquito clamps. The 1st sacral nerve root was located and from this as a guide the 1st, 2nd, 4th and 5th and the 1st sacral roots were identified on the distant side and their posterior divisions were severed. The sensory root can be easily distinguished from the motor. It lies superficial to the motor root and the separation of the two is anatomically made by the denticulate ligament, which partitions one from the other as they enter the dura. Both roots are elevated upon a small hook, the divisions between them recognized; another hook passes under the sensory root alone. The hook holding both roots is withdrawn, leaving the sensory alone in the grasp of the second hook, and this sensory root is severed with small sharp-pointed scissors. The corresponding roots on the near side were then severed. The dura was carefully sutured with fine silk in a running button-hole stitch. The muscles were brought together with plain catgut; the fascia separately closed, also with plain catgut and the skin sutured. In all, the operation took one hour and thirty minutes. It was interesting to note that there was no evidence of any injury done to the cord by the stovain needle. There was an infiltration of the arachnoid with the stovain solution, and there was no motor response when the motor roots were touched, as does occur when ether is used. The stovain had blocked the motor as well as the sensory roots. Following the operation the patient was kept on his face ten days. Two days after operation examination showed only slight planter reflex of both feet. No ankle clonus. Knee reflexes practically normal. Muscular action fair in both legs. No loss of sensation in legs or feet. Recovery uneventful.

Case of Bone-Graft for Fracture. Patients. Stereopticon Demonstration.

Reported by E. H. Fisk, M.D.

DR. J. B. BOGART, in opening the discussion, said:—"I am perhaps more familiar than the others are with these cases, most of them having been operated in the Kings County Hospital. I have not seen the patients before, but have seen most of the X-ray plates, some of which show the results better than the screen does.

"I am also especially interested because I saw a good deal of this work done by Dr. Murphy during my enforced absence last spring.

"In the first place I want to compliment my colleague, Dr. Fiske, upon his successful technic. This is the first and most important requisite for doing any of this bone-work. In fact, I would go a step further than he went. I am firmly convinced that the same technic which carried through all these cases without a single infection would have been equally successful in the case of the Lane plate. Dr. Fiske has shown you so many wonderful things to-night that I feel at liberty to take issue with him on some points. My own judgment is, that the Lane's plate gives a better alignment than a bone-graft and that it should be used in the ordinary case of fracture which requires an artificial appliance for holding the fragments in place. You may have noticed that, in the fractures of the femur, which Dr. Fiske showed, the bones were not quite straight in either case. Yet the results are good. It is my best judgment that these children will not notice the little bowing, and it is possible that the contour of the legs may even improve. Wonderful things take place after fractures in children. I was particularly interested in the fracture of the femur in which there was, before the operation, overlapping and a very bad displacement. The fracture was in the middle third. I recently had a similar fracture in a boy under my care in the Jewish Hospital.

"In that case no open operation was done. The dressings were removed about a week ago. The position of the bony fragments had been identical with Dr. Fiske's case.

"When I returned from my vacation I found the boy's leg and hip were in a plaster-of-Paris cast and, in addition to the disalignment, there was an overlapping. I had the cast removed and attempted by extension to overcome the shortening. It was considerable; at least three-quarters of an inch. The attempt was unsuccessful because union had begun. I then, under ether, broke up the union, applied extension with coaptation splints and succeeded in overcoming the shortening, but did not succeed in otherwise improving very much

the relation of the fragments to one another. However, we continued our treatment and took off the dressings a week ago. The leg seemed to be perfectly straight, union was good, and at the end of the six weeks he left the hospital. A skiagram, taken in the lateral direction, seemed to show that the two fragments did not touch each other, at all. Yet there is a triangular callus between them which holds the bones firmly united. There is no apparent deformity—the result is as perfect as could be wished for. My own judgment is, that although Dr. Fiske's boy had an ununited fracture at the end of five weeks, if the treatment had been continued he would have got union and the result would have been entirely satisfactory."

DR. J. B. BOGART, in closing the discussion, said:—"I want to commend especially the case in which Dr. Fiske made a new malleolus, in which the result was criticised. I think the foot is in perfect position, and I think the result is excellent. I do not think the nail will have to be taken out. I did not intend that all of my remarks should be on the opposite side. That is certainly brilliant."

DR. MATHIAS E. FIGUEIRA, in discussion, said:—"I don't want to prolong this discussion as I have to read a paper, myself, but I want to say that the indications for the bone-plate and for the bone-graft are different and distinct. Take the cases of Dr. Fiske, of hip disease, of hip fracture. There is no place for a Lane's plate there at all. The indication for bone-graft, or better still for nailing, was clear and distinct. Take a fracture, an ununited fracture, in which all means have been used, in which friction has been used and casts used, in which the patient has had repeated means for union and union fails, that is the case for a bone-graft and not for a bone plate.

"In cases in which the forces of nature, the osteogenetic properties of the bone are not good or we want to replace lost bone, are the cases for a bone-graft, but where we are sure that the bone-forming power is good, and from good, surgical reasons we want to hold fragments firmly together, then the Lane's plate is indicated. From remarks made here to-night this does not seem clear to some. The cases presented by Dr. Fiske lose a great deal of interest from the fact that he has not given any detailed history and we cannot tell which were simple fractures, or ununited fractures, or hip disease (tubercular), and so cannot discuss the means of treatment he used."

DR. J. S. WIGHT, in discussion, said:—"Fractures fall naturally into two classes, and in respect to time, the old and the recent. Dr. Figueira has just spoken of old fractures. There is no question about the value of the bone-graft in old fractures, but in recent fractures, which is the class that has been shown to-night, they warrant the use of the bone-graft, for those are the ones in which there must be repair and in which there is some loss of bone that has to be replaced and in those cases it is certainly the best practice to use the bone-graft. It is unfortunate, I think, for the exhibition of these cases, to-night, that we have not seen them at some more remote period when the results would have been much better. They are splendid results and I have no doubt that in future they will benefit tremendously from this method of treatment."

Essential Hematuria.

Reported by Mathias E. Figueira, M.D.

DR. F. A. HULST, in opening the discussion, said:—"The portion of the kidney removed, a part of which has been entirely destroyed by examination. Anatomically the kidney appears normal, and histologically, sections from various parts all through show no change, so there is really nothing to see. From my standpoint, as far as I can determine, either from the anatomical or histological point of view, we have what seems to be a normal kidney. This has been in formalin solution now, for some months, and it is pretty well washed out. I can find no evidence of nephritis in the specimen and no evidence of disease or any abnormalities of the blood vessels."

DR. J. P. MURPHY, in closing the discussion, said:—"I know of three cases similar to the one described by Dr. Figueira. Two of them occurred in Roosevelt Hospital in the service of Dr. McBurney, who reported them, and one in St. Mary's Hospital in the service of the late Dr. George R. Fowler.

"In the case of Dr. McBurney (Dr. Delatour spoke about it), a section was made from the kidney. The kidney was not removed and nothing pathologically was found in the microscopical examination, but I remember him distinctly stating at that time, and Dr. Fowler saying later, that in this case of Essential Hematuria, splitting of the kidney and suturing it together seemed to cure the condition. They did not offer any explanation as to why, but it was a clinical fact that it did."

**Continuation of Transactions of The Brooklyn Surgical Society.
Stated Meeting of May 1, 1913, which appeared in
December, 1913.**

Dr. W. D. BRINSMADE, in discussion, said: "I have been challenged. I attempted to make myself clear and I think that most of the gentlemen understood me. I was not speaking in criticism of what Dr. Gordon had done. I might also remark that I withdrew what I said about the diagnostic ability of physicians."

"I did refer to the class of cases, Dr. Figueira, who have a subnormal temperature, a pulse of 160 and fecal vomiting for hours, and who are in a cold, clammy sweat, cases that you cannot save or anybody else. These are the cases and not the class of cases Dr. Gordon operated, to which I had reference, and I say for the benefit of surgery in this community, if you and I and all the rest of us would refuse to operate on those cases in extremis, we would begin to get them a little earlier, before they are in extremis."

Dr. MATHIAS FIGUEIRA, in discussion, said: "In starting the discussion Dr. Brinsmade said, addressing Dr. Gordon: 'If you were to send such cases home and refuse to operate what would happen?' He had reference to Dr. Gordon's cases and nothing else."

Dr. WILLIAM LINDER, in discussion, said: "Carcinoma of the cecum and ascending colon is not as malignant as it is in the small intestine, because in this location the lymphatics are few for the function of this portion of the elementary tract is mainly that of a fecal container. Carcinoma in this region is very amenable to treatment. Here early we can completely eradicate the disease if we follow the same principle in this location as we do in carcinoma of the breast. It has been shown that carcinoma appearing in the caecum necessitates the removal of at least six inches of the terminal portion of the ileum, the caecum, ascending colon and hepatic flexure on account of the peculiar distribution of the lymphatic supply in this location."

"I have four cases illustrating this type of cancer, who are now living from two to four years, without any signs of recurrence."

A Case of Subglenoid Dislocation of the Humerus, Operation, Patient.

By Joseph P. Murphy, M. D.

J. M. received the dislocation of the humerus some time in March, 1912. He came to Coney Island Hospital around in June, with a subglenoid dislocation with pressure on the brachial plexus and a concomitant paralysis of the forearm, with pain and tingling. Several attempts at reduction were made with ineffectual results.

In July, 1912, an operation was attempted to cure the deformity and disability. An incision was made exposing the Pectoralis Major, which was severed at its attachment. This gave free access to shoulder joint. Evidence of a repaired fracture of surgical neck of humerus was noted. The capsule was opened, the dislocation reduced. Unfortunately the wound was infected.

At present rate, ten months after injury, man has a good result functionally.

A Case of Compound Fracture of Skull, Operation, Bone Transplantation, X-Ray Plates, Patient.

By Dr. Joseph P. Murphy.

J. S., brought to the Coney Island Hospital, November 2, 1912. He had a compound depressed fracture of the skull about the size of an old trade dollar, over the Rolandic area on the left-hand side. The bones were badly comminuted, and in places fragments were driven through the dura into the cerebral tissue.

Operation six hours after accident. Fragments removed and rents in meninges sutured with fine catgut. A large fragment of the outer table, with its adherent periosteum, was dipped in iodine solution, then washed in a normal salt solution, and then was used to close the opening in skull. This transplanted bone was placed with the external surface covered by its periosteum in contact with the repaired dura matter. The superficial structures were united without drainage.

The picture represents the condition three weeks after operation.

At the present time, six months after injury, the skull opening is firmly closed. As yet no marked cerebral symptoms noted.

Medical Society of the County of Kings

MONTHLY BULLETIN TO MEMBERS

MARCH, 1914

MINUTES OF STATED MEETING, MARCH 17, 1914.

The President, Dr. J. Richard Kevin, in the Chair. There were about 290 present. The meeting was called to order at 8.35 P. M.

The minutes of the previous meeting were read and approved.

Report of Council.

The Council reported favorably upon the following applications for membership:

James A. Cooley, 552 Pacific St.; Cornell, 1908; proposed by D. F. Lucas; seconded by A. M. Judd; February, 1914.

Wm. Frederick Drescher, 289 11th St.; L. I. C. H., 1912; proposed by S. H. Lutz; seconded by B. C. Collins; February, 1914.

M. Malcolm Knoller, 246 Schermerhorn St.; L. I. C. H., 1909; proposed by M. B. Gordon; seconded by E. H. Mayne; February, 1914.

Royall H. Willis, 214 Park Pl., L. I. C. H., 1896; proposed by E. E. Cornwall; seconded by Membership Committee; January, 1914.

For Reinstatement.

(Former Members.)

John N. Balderson, 309 Decatur St.; L. I. C. H., 1908; proposed by C. D. Kevin; seconded by Membership Committee; February, 1914.

Dominie G. Bodkin, 897 Lafayette Ave.; P. & S., N. Y., 1899; proposed by C. D. Kevin; seconded by Membership Committee; February, 1914.

Walter J. Brinckerhoff, 180 Willoughby Ave.; L. I. C. H., 1892; proposed by C. D. Kevin; seconded by Membership Committee; February, 1914.

John J. Dooling, 31 Van Buren St.; L. I. C. H., 1899; proposed by C. D. Kevin; seconded by Membership Committee; February, 1914.

Henry C. Fulda, 683 Bushwick Ave.; P. & S., N. Y., 1908; proposed by C. D. Kevin; seconded by Membership Committee; February, 1914.

Percy Houghton, 195 Leonard St.; Georgetown, 1901; proposed by C. D. Kevin; seconded by Membership Committee; February, 1914.

Leo A. Lynch, 591 Eastern Parkway; Johns Hopkins, 1903; proposed by C. D. Kevin; seconded by Membership Committee; February, 1914.

Leo A. Parker, 77 New York Ave.; P. & S., N. Y., 1905; proposed by C. D. Kevin; seconded by Membership Committee; February, 1914.

James G. Trimble, 503 Vanderbilt Ave.; Harvard, 1906; proposed by C. D. Kevin; seconded by Membership Committee; February, 1914.

Owen M. Waller, 762 Herkimer St.; Howard Univ., 1903; proposed by C. D. Kevin; seconded by Membership Committee; February, 1914.

Frank E. Wilson, 1242 Bushwick Ave.; Jefferson, 1882; proposed by C. D. Kevin; seconded by Membership Committee; February, 1914.

Charles Wuest, 1025 Bushwick Ave.; P. & S., N. Y., 1887; proposed by C. D. Kevin; seconded by Membership Committee; February, 1914.

Election of Members.

The following, duly proposed and accepted by the Council, were declared elected to active membership:

Anna M. Agnew, L. I. State Hospital; Univ. Minn, 1899; proposed by E. H. Mayne; seconded by Membership Committee; January, 1914.

Donald M. Gildersleeve, 184 Joralemon St.; L. I. C. H., 1912; proposed by B. B. Mosher; seconded by C. P. Gildersleeve; January, 1914.

Daniel A. McAteer, 4430 18th Ave.; Univ. and Bell., 1908; proposed by E. H. Mayne; seconded by Membership Committee; February, 1912.

Constant E. Schradieck, 21 Hanson Pl.; Univ. Rostock, 1900; proposed by W. A. Northridge; seconded by Membership Committee; December, 1913.

Marcus F. Searle, 775 Washington Ave.; N. Y. Homeop., 1911; proposed by C. F. Barber; seconded by Membership Committee; November, 1913.

Sanford Shumway, 442 Lafayette Ave.; L. I. C. H., 1911; proposed by J. A. Lee; seconded by O. A. Gordon; January, 1914.

William L. Suesholtz, 180 Martense St.; L. I. C. H., 1907; proposed by R. S. Fowler; seconded by Membership Committee; January, 1914.

By Transfer.

Samuel Feldstein, 1147 Dean St.; Harvard, 1902. Transfer from N. Y. County Medical Society.

Applications for Membership.

Applications for membership were received from the following:

- W. Gray Phillips, Jr., 1899 Bedford Ave.; L. I. C. H., 1912; proposed by R. F. Barber; seconded by B. Harris; March, 1914.
 Richard Birnie, 646 Herkimer St.; Harvard, 1911; proposed by C. D. Kevin; seconded by Membership Committee.
 Terence J. Reilly, 86 S. 9th St.; L. I. C. H., 1892; proposed by C. D. Kevin, seconded by Membership Committee.
 Charles E. Gardener, 27 Schermerhorn St.; L. I. C. H., 1899; proposed by C. D. Kevin; seconded by Membership Committee.
 Robert H. Gray, 768 Halsey St.; L. I. C. H., 1909; proposed by C. D. Kevin; seconded by Membership Committee.
 John J. O'Keefe, 2553 Church Ave.; L. I. C. H., 1908; proposed by C. D. Kevin; seconded by Membership Committee.
 Patrick J. Murray, 478 Classon Ave.; Bellevue, 1895; proposed by C. D. Kevin; seconded by T. A. McGoldrick.
 Thos. Aloysius Lynch, 514 61st St.; L. I. C. H., 1908; proposed by John F. Meagher; seconded by C. D. Kevin.
 Joseph Zicarelli, 1377 Herkimer St.; L. I. C. H., 1909; proposed by J. H. Andrew; seconded by C. D. Kevin.

Applications for Reinstatement.

(Former Members.)

- Carroll Leja Nichols, 232a Putnam Ave.; Cornell, 1904; proposed by J. H. Andrews; seconded by C. D. Kevin.
 Thomas V. Higgins, 982 Bedford Ave.; L. I. C. H., 1907; proposed by J. Richard Kevin; seconded by Membership Committee.

Scientific Program.

Paper: "Some Interesting Points in the Diagnosis and Treatment of Gonorrhœa in Women." (Illustrated by lantern slides.)

By Charles C. Norris, M.D., of the Univ. of Penn., Philadelphia.

Discussion by George Gray Ward, M.D., of Manhattan; Drs. R. L. Dickinson, L. Grant Baldwin, H. H. Morton and J. O. Polak.

On motion by Dr. Polak, a rising vote of thanks was tendered the speakers of the evening.

Miscellaneous Business.

Dr. Sylvester J. McNamara, Chairman of the Committee on Legislation, reported progress.

Dr. Louis C. Ager reported that the Committee for the Prevention of Tuberculosis had received his suggestion for the establishment of a Hospital Admission Bureau in Brooklyn with marked cordiality.

It was with deep regret that the Chair announced the deaths of Stanley Howard McGillvary, F. M. Burke and George MacNaughton.

Dr. Robert L. Dickinson then spoke as follows:

(Remarks printed on page 151.)

A unanimous rising vote was taken as a mark of appreciation of the important service which Dr. MacNaughton had rendered the Society for many years, and the Secretary was directed to send a letter of condolence to the family.

On motion by Dr. John C. MacEvitt, it was unanimously carried that the Council and members of the Society attend the funeral service in a body.

Dr. William J. Cruikshank, Chairman of the Committee on Medical Economics, spoke as follows:

"Mr. President. At the last meeting of the Society, your Economic Committee felt called upon to direct attention to the attitude of the present Health Department toward the medical profession, as evidenced in a recent contribution to the public press. This attitude was one of utter lack of appreciation of the necessity of securing to the Health Department the coöperation of the medical profession.

It is, therefore, a pleasure to call to your attention this evening, a paragraph from the New York Medical Journal of March the 14th, which reads as follows:—

"IMPORTANT STEP BY THE DEPARTMENT OF HEALTH.

"The Department of Health, of the City of New York, realizing that the efficiency of its work depends largely on the coöperation of the medical profession, their intelligent grasp of public health problems, and a correct understanding of the attitude of the health authorities toward their solution, has decided to increase the edition of the *Weekly Bulletin* so that it can be sent regularly to every physician in this city and to a limited number of other persons interested in public health matters. The editor will appreciate criticisms and comment, and will be glad to answer inquiries addressed to the Bureau of Public Health Education, Department of Health, 149 Centre Street, New York."

"This is, indeed, an important step and one that should meet the approbation of every physician. Your Committee, therefore, recommends that the Society formally approve this measure to the end that the Department of Health may be encouraged in further realization of the fact that its successful administration depends upon its coöperation with the rank and file of our profession. It is in that way that the public health may best be conserved."

Meeting adjourned at 10.15 P. M.

BURTON HARRIS, *Secretary*.

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NO. 5

Original Articles.

PRE-CANCEROUS LESIONS.*

Joseph C. Bloodgood, M.D.,

of Baltimore, Md.

TO improve the results, to increase the number of cures of cancer, there are two factors over which we have control—the duration of the disease and the treatment.

Long experience and investigation seem to show that cancer never begins in healthy tissue.

There is always a pre-existing local defect which is benign and in which later there may be a cancerous development.

When this previous defect is situated on the skin, or beneath the skin, or on the mucous membrane of the lip, tongue and mouth, everyone is aware of the little lesion.

These previous defects or local lesions in which cancer may develop may be called pre-cancerous.

The complete removal, or complete healing, of these pre-cancerous lesions will, in my experience, accomplish a cure in one hundred per cent of cases, that is, none of these people will die of cancer in a growth in the situation from which the pre-cancerous growth has been removed.

Such cases cannot be called actually cured of cancer, but we can be quite certain that such treatment prevents cancer in many, if not all, of the patients treated.

First, little tumors which may have been present since birth, or noticed later in life. These little tumors may occur on the skin as warts, moles or *nævi*. They may be felt beneath the skin as hard or soft nodules the size of shot, peas, beans, or larger, and they may be felt deeper, as in the breast, thyroid gland, deep in the neck.

Second, unhealed ulcer of the skin and mucous membrane. Here there may be a wound, or a burn, or some injury or disease which destroys the skin or mucous membrane. The wound never heals, or heals badly, and then breaks down, the open sore remains for weeks, months, or years, often irritated by the patient. At any time, usually after months or years, cancer may develop in such an ulcer.

Such ulcers are especially dangerous on the tongue, and one week's delay here is equivalent in danger to six months' delay for a like ulcer on the lip.

Third, some form of chronic irritation of the skin and mucous membrane which does not actually destroy them. For example,

* Read before the Brooklyn Pathological Society, January 5, 1914.

chronic inflammation and irritation about bad teeth (cancer of the gum never develops about healthy clean teeth). Inflammation and irritations of the mucous membrane of the mouth, lip or tongue in smokers, from chewing tobacco, or from snuff. This tobacco irritation may lead to the formation of white patches (leucoplakia), or ulcers, or thickening of the mucous membrane. Cancer at any time may develop in these areas of irritation.

All of these pre-cancerous lesions, tumors, unhealed ulcers, areas of chronic irritation, and inflammation of the skin and mucous membrane are recognized by their hosts the moment they begin. Delay in treatment is due to ignorance, fear or skepticism.

As stated before, treatment in this early pre-cancerous stage, if proper treatment, should accomplish one hundred per cent of permanent cures.

Any treatment which does not completely remove the little tumor, or accomplish the healing of the ulcer, or completely excise the ulcer, or stop the irritation of the skin or mucous membrane, or any treatment which does not completely excise the ulcer, the result of the irritation, is more dangerous than no treatment at all.

In this stage good surgery should give one hundred per cent of cures.

In this stage bad treatment is dangerous. Far better to delay for good treatment than to subject one's self to bad treatment in this stage.

Bad treatment is incomplete removal of the little tumor or ulcer; irritating treatment which does not destroy completely the cells in the tumor, ulcer, or area of irritation. Such irritating treatments are: application of caustics, curetting, improper use of X-rays and radium, and carbon dioxide snow.

Bad Treatment.—These pre-cancerous lesions may in some cases be completely destroyed by the application of caustic salves, or curetting, or X-ray or radium, but with such treatment a piece is rarely, if ever, saved for microscopic study.

This treatment is dangerous, first, because it may be incomplete; second, there should always be a microscopic study of a piece of the pre-cancerous lesions, because in some cases cancer develops very quickly and can only be recognized with the microscope.

It takes less time to completely excise such pre-cancerous lesions with the knife (combined with the actual cautery in some cases, in certain localities; for instance, the tongue). The operation in most instances can be done under local anesthesia without pain or discomfort. With good surgery the scar will always be the least possible after any method of treatment.

With such proper surgery a piece of the lesion excised may always be studied at once with the microscope and the possibility of an early development of cancer recognized. This in some cases would lead to an immediate more radical operation.

My investigation over a period of twenty years with almost three thousand cases demonstrates that in cancer in accessible regions like the skin and mucous membrane of mouth, lip and tongue, and subcutaneous areas; that is, with palpable nodules, ulcers and areas of irritation; good surgery in this pre-cancerous stage should accomplish one hundred per cent of cures, because this early recognition and treatment lead to the complete eradication of the pre-cancerous lesion while still benign, or to the recog-

nition of the earliest stage of cancer by the microscopic study of the piece excised, and thus lead to the radical operation indicated at a period most favorable for the cure of cancer.

Pre-cancerous lesions of the internal organs are difficult to demonstrate and will not be discussed in this paper, but I agree with William and Charles Mayo and others, that gastric ulcers and chronic irritation of gall stones and inflammation of the gall bladder should be looked upon as pre-cancerous lesions and lead to good, appropriate surgical treatment in the earliest stage of the disease. This treatment will be indicated by what the patient complains of, because rarely, if ever, can a tumor or ulcer be felt.

The great hope for increasing the number of cures of cancer and decreasing the number of deaths from cancer, lies in the education of the public and the profession to the significance and potential danger of the pre-cancerous lesion; the education of the surgeon as to the best surgery and the education of the surgeon and the pathologist as to the recognition of the earliest stage of the beginning of cancer in the benign pre-cancerous lesion.

The excision of the pre-cancerous lesion has the great advantage of allowing a microscopic study. There is no other way of excluding the possibility of cancer.

The short duration of the pre-cancerous lesion does not preclude cancer. The long duration does not indicate cancer.

The microscopic investigation not only leads to a decision whether it is cancer or not, but, if it is cancer, to the type of cancer. These microscopic diagnoses in the pre-cancerous lesion—benign, early cancer, type of cancer—lead to immediate operations, which in some cases are radically different for the benign and for the cancer, and for the different types of cancer.

Any treatment, therefore, which does not allow the examination of a microscopic section is not devoid of danger and is not the best treatment.

The best results, therefore, in the pre-cancerous stage, where the factor of the duration of the disease is controlled, rest upon good surgery and good pathological diagnosis.

To repeat, incomplete treatment in this early stage often yields worse results than complete treatment in a later stage.

COMPARATIVE TABLE OF RESULTS IN CANCER OF LOWER LIP, AS ASCERTAINED IN 1908 AND 1913 IN THE SURGICAL PATHOLOGICAL LABORATORY OF THE JOHNS HOPKINS HOSPITAL AND UNIVERSITY.

	<i>Total</i>	1908	1913
Benign Lesions	15	6=4%	9=18%
Malignant Warts	18	15	3
Cancer Totals	167	129	38
Operable	138	103	35
Bone Involved	10	8	2
Inoperable	19	18 } 18%	1 } 8.5%

This table shows that the local propaganda of education has increased the benign lesions in which there are 100 per cent of cures from 4 to 18 per cent, and decreased the hopeless or inoperable cases from 18 to 8 per cent.

The period 1908 represents nineteen years—from 1899; the period 1913—five years.

TABLE OF PER CENT OF CURES IN THE OPERABLE CASES OF CANCER UP TO 1908.

<i>Excision of</i>	<i>Primary</i>			<i>Recurrent</i>		
	<i>Total</i>	<i>Cured</i>	<i>Local Re-</i> <i>currence</i>	<i>Total</i>	<i>Cured</i>	<i>Local Re-</i> <i>currence</i>
Lip Lesion	11	7=63%	1	5	1=20%	3
Lip and Glands						
No Metastasis	21	20=95%	1	5	3=60%	2
Metastasis	12	6=50%	1	5	1=20%	4
Totals	44	33=75%	3	15	5=33%	9

This table shows that any previous treatment of the little lesion on the lip which is not effectual reduces the chances of a cure from a later proper operation from seventy-five to thirty-three per cent.

In cancer of the lip the glands of the neck beneath the jaw should always be thoroughly removed. The probability of their involvement is at least thirty-six per cent.

We know that X-ray has no effect on metastatic glands in the neck, and we have no data to indicate that radium will be any more effectual. Therefore, granting that X-ray or radium may now and then cure the lesion on the lip, the patient still runs the risk of metastasis to the glands. It is, therefore, a very dangerous treatment to employ X-ray and radium for any operable cancer of the lip.

Of the eighteen cases of malignant warts which are not included in the above table, seventeen have been cured: fifteen of these are five-year cases.

TABLE SHOWING THE DURATION OF THE DISEASE IN LESIONS OF THE LOWER LIP. BEFORE OPERATION.

	<i>Cases</i>			<i>Cases</i>	
Less than 3 months.....	11	18 months to 2 years.....	7		
3 to 6 months	18	2 to 3 years.....	29		
6 to 9 months	17	3 to 5 years.....	18		
9 to 12 months	17	5 years and over.....	32		
12 to 18 months.....	21				
Total of Cases.....				170	

This table shows the necessity of a propaganda of education. In only eleven, equaling seven per cent of cases, have patients sought advice for the little lesion on the lower lip at the most favorable period—within the first three months of its existence. There is really no necessity for the delay of even three months, because within this period metastasis to glands has taken place in two cases, one of which has been cured.

Of these eleven patients ten, equaling ninety-one per cent, are well.

The lesions in these eleven cases were as follows: three benign—all well; two malignant warts—both cured; six fully developed cancers—in four of these the glands showed no metastasis, and these patients are well. In two the glands showed metastasis. The patient whose glands were removed at the first operation is well; in the second patient the glands were not removed as they should have been at the first operation, and this patient died of cancer of the glands of the neck.

The per cent of cures, therefore, in the six cases of cancer in which the lesion had been present three months or less, is eighty-

three per cent as compared with the average of seventy-five per cent in all cases. The per cent of cures in the four cases of cancer without metastasis to the glands is one hundred per cent, as compared with ninety-five per cent in all cases without metastasis to the glands.

Had the glands been removed at the primary operation in this one case, the chances are that the per cent of cures in this group would be one hundred per cent.

This gives the facts in a nutshell. Patients with little lesions of the lip who submit to the simple operation at least within three months of noticing the lesion should have one hundred per cent chances of a cure, if the surgery is thorough. We have no available evidence that any other method of treatment promises results which can compare with these.

The two factors over which we have control are the duration of the disease and the treatment. It should not be a difficult matter to educate the public to both.

The etiological factors in cancer of the lower lip are: burns from smoking, wounds from teeth, irritation from carrying nails and other foreign material between the lips, unhealed fever blisters, cracks and chaps. The little lesion can always be immediately seen and felt. Pain is usually absent. When the lesion is first observed smoking should cease, the teeth should be put in order, the habit of biting the lips or carrying foreign material between them corrected, the little lesion should never be touched with caustics, or picked. If it does not heal within three weeks, it should be excised. This can be done under local anesthesia without pain or mutilation. The lesion should be excised with a good margin of healthy tissue and subjected to microscopic examination, because it is possible that cancer may have developed, even within one month, although this is very unusual.

If cancer has developed the glands of the neck must be removed.

When this rule is followed in every case, no one should fear cancer of the lower lip. There will be no mutilation, and the danger of even the operation on the glands in the hands of a competent surgeon is negligible.

COMPARATIVE TABLE OF RESULTS IN CANCER OF THE TONGUE AS ASCERTAINED IN 1908 AND 1913 IN THE SURGICAL PATHOLOGICAL LABORATORY OF THE JOHNS HOPKINS HOSPITAL AND UNIVERSITY.

	<i>Totals</i>	1908	1913
All Cases	100	70	30
Benign Lesions	15	6=8%	9=30%
Malignant Warts	4	3	1
Cancer	81	61	20
Inoperable	13	11=18%	2=10%
Postoperative Deaths ..	15	11=22%	4=22%
Lost track of.....	18	15	2
Cured	11	5	6
Out of cases.....	36	24	12
Per cent	30%	21%	50%

This table demonstrates that the local propaganda of education has increased the very early benign lesions from eight to thirty per cent. In this stage one hundred per cent of cures are always accomplished by proper treatment—the excision of the local area on the tongue under local anesthesia—a simple, painless operation.

The four cases of malignant warts have been cured. These represent the earliest stage of cancer. The operation necessary to cure is the same as for the benign lesions.

The inoperable, hopeless cases have been decreased from eighteen per cent to ten per cent. This, of course, is still too large.

The postoperative deaths remain the same—about twenty-two per cent. These deaths, however, have only occurred after the most extensive operations for cancer in its very late stages and are the direct result of delay on the part of the patient.

The cures have increased from twenty-one per cent to fifty per cent. The improvement is really greater, because in the 1908 cases fifteen have been lost track of, while in the 1913 cases only two cases were not traced.

This great improvement in the number of cures is due chiefly to the education of certain individuals to seek advice very quickly after the first appearance of the lesion on the tongue.

The operation in the early stage of cancer of the tongue not only promises a larger probability of a cure, but the necessary operation is less dangerous and involves practically no mutilation.

The only hope of accomplishing cures in the later stages of cancer of the tongue rests upon the removal of a piece of the lower jaw. This operation has an element of danger and is mutilating.

One week's delay after the first appearance of a lesion on the tongue involves a greater risk than three months' delay for a similar lesion on the lower lip, and one year's delay for a similar lesion on the skin of the face or body.

There is absolutely no reason for this delay, if the people but understood the situation.

The chief irritating factors in cancer of the tongue are burns from smoking, irritation and wounds from teeth, syphilitic ulcers and the irritation of chewing snuff by mouth.

The moment an individual notices any lesion on the tongue, floor of the mouth, or mucous membrane of the oral cavity, or little white patches, tobacco should be discontinued at once, the teeth should be put in absolute order, there should be a Wassermann test made for syphilis, and if this is positive immediate treatment with salvarsan. If the little lesion does not heal within two weeks, it should be excised by a competent surgeon.

With the knowledge of these facts none should fear death from cancer of the tongue, nor the operation for its cure, nor mutilation.

BREAST TUMORS.

Results of an investigation of about 1,300 cases recorded in the Surgical Pathological Laboratory of the Johns Hopkins Hospital and University during the past twenty-four years.

From this investigation we can say to any woman over twenty-five years of age, that if she submits to an operation within a few days after the lump in the breast is first noticed, her chances are about fifty per cent that the lump will be benign and that a cure can be accomplished by the removal of the lump only, and that in the majority of cases the breast will not have to be sacrificed.

If at the exploration of this lump it should prove to be malignant her chances are one out of four that the type of cancer is the least malignant, and our experience demonstrates that the immediate radical operation yields one hundred per cent of cures. At the very worst, at this early period, the probabilities of a permanent cure are eighty-five per cent.

During these twenty-four years we have recorded 753 malignant tumors and 542 benign. In recent years, during which patients have sought advice earlier, the relative number of benign tumors has gradually increased. This suggests that many malignant tumors have their origin in benign after a period of months or years.

The following table shows the results of the propaganda of education:

	1908	1913
Inoperable	27.5%	18%
Recurrent	9 %	6%
Five-year cures	35 %	42%
Local recurrences.....	10 %	10%

This table shows that in the past five years the per cent of inoperable cases has been reduced from twenty-seven to eighteen, recurrent cases from nine per cent to six. Five-year cures have been increased from thirty-five to forty-two per cent. This is entirely due to earlier intervention on educated women, and is not due to better surgery. That the local recurrences have remained the same suggests that the surgery has not improved. This is purely a surgical problem and will be discussed in a separate contribution.

By recurrent cases we mean patients operated on (with few exceptions incompletely) elsewhere and who have entered the clinic with local recurrence in the region of the scar.

Results in adenocarcinoma:

All cases, 35—76% of cures.

Early cases, 15—100% of cures.

Late cases, 20—64% of cures.

These figures—35, 15 and 20—represent the actual number of patients apparently cured five years or more since operation.

By early cases I mean those in which there was only a lump, that is, which were clinically benign. The operation in these instances consisted of an exploratory incision into the lump and after the immediate diagnosis of cancer the cauterization of the wound with pure carbolic acid or the actual cautery followed immediately by the complete Halsted operation.

In the late cases the clinical signs of cancer were present—retracted nipple, changes in the skin. The complete Halstead operation was performed without an exploratory incision.

I wish to emphasize, first, that in the early cases—the clinically benign—there was a delay of a few minutes between the exploratory incision into the lump and the radical extirpation.

Second, there is no difference in the gross or histological pathology between the early cases, clinically benign, and the late cases, clinically malignant; no difference in the operative treatment, except the exploratory incision in the early cases. The only difference, therefore, is in the result—early cases, proper

intervention one hundred per cent of cures; late cases sixty-four per cent of cures.

The adenocarcinomas are the least malignant form of carcinoma of the breast. Only three per cent (four cases) have been inoperable, and there has been but one local recurrence.

Results in Carcinoma.—The more malignant forms of carcinoma have been designated medullary, scirrhus and cancer cysts. The results have been as follows:

All cases cured, ninety-two, or thirty-six per cent.

Early cases, twelve cured, or eighty-five per cent.

Late cases, eighty cured, or thirty-five per cent.

These figures show that early intervention properly performed upon a lump in the breast offers at the worst eighty-five per cent chances of a probable cure.

Do we need better evidence than this to convince women of the importance of looking upon a lump in the breast as an acute disease and seeking immediate competent surgical advice?

There are two factors over which we have control—the duration of the disease and the surgery. We cannot influence the pathology.

Age of Onset.—There is an erroneous impression that benign tumors are rare after twenty-five. Of 407 benign lesions, of which I have accurate data, in 95 the age of onset was less than twenty-five years; in 302, or seventy-five per cent, over twenty-five years. These cases are pretty evenly distributed between twenty-five and sixty years of age. The age, therefore, in patients over twenty-five, is not at all helpful in differentiating a benign from a malignant lesion.

Duration of the Disease.—It is interesting to note that patients with benign lumps as a rule seek advice earlier than patients with malignant tumors. Both have lumps. Why should the individual with the benign lesion seek advice earlier? This is due to the fact that pain is more frequently present in a benign tumor of the breast than in the malignant. Pain is a symptom of the late stage of cancer, not of the early stage.

It is quite true that benign lumps may remain in the breast quiescent for years. It is also true that some of the cured cases of cancer of the breast had observed the lump for many years. It is also true that lumps may appear in the breast and disappear (simple cysts). These facts apparently have had great influence on the minds of the laity and perhaps the majority of the profession. Yet, these facts are the exceptions to the rule. It is what the patients and the physician would like to have happen, but as a rule is not what really does happen. Delay, after the lump is observed, in women over twenty-five years of age, is a distinct gamble with death, with everything in favor of the latter. Nothing can be gained by delay. The operation is inevitable. To have this operation at once offers the greatest chances of avoiding loss of the breast. If the nature of the disease renders this indispensable, the patient is repaid by the greatest probability of a cure, at worst eighty-five per cent.

Incomplete Operations.—It is of the utmost importance for the surgeon, the physician and the public to know the danger of incomplete operation for malignant tumors of the breast. Incomplete removal with the knife of a malignant lesion anywhere is worse than no treatment at all. These disastrous results are especially evident in cancer of the breast and tongue.

In all cases of adenocarcinoma—early cases, clinically benign—there has been but one cure (nine per cent) after incomplete operations and operations in two stages.

Clinically and pathologically, these eleven cases were apparently in all respects identical with fifteen cases subjected to exploratory incision followed immediately by the complete radical operation, with one hundred per cent of cures. Therefore, we may state that in the least malignant form of cancer of the breast our records show that incomplete operations in the early stage reduce the probabilities of a cure from one hundred to nine per cent.

It is only just to Dr. Halsted's clinic to state that in only three instances has this happened, and that many years ago. The other cases were received from outside sources; usually the tumor only, now and then the breast, have been sent to the laboratory for diagnosis; the malignant nature has been recognized and reported; the complete operation followed in a few days or weeks. Among the cases in which five years or more have elapsed since the operation, there is but a single cure, and in this case the breast was removed at the first operation.

Among seventeen cases of the more malignant forms of carcinoma subjected to incomplete operations, in which it is five years or more since the operation, there is not a single cure—that is, these patients who should at the worst have had eighty-five per cent chances of a cure, had none.

In early cases, clinically benign, we must make an exploratory incision for diagnosis. Otherwise every woman with a lump in her breast would have to be subjected to the radical operation for cancer. This differential diagnosis at the exploratory operation is a surgical problem. It is not an extremely difficult one, but every surgeon who proposes to take this responsibility should not do so without preliminary training, which is easily available in this country.

When there is any doubt as to the diagnosis, it is safer to do the complete operation for cancer.

In my records of 542 cases of benign lesions, fifty-four have been treated for cancer—about ten per cent. In twenty-seven of these cases the benign lesion had all the clinical signs of cancer. Confronted with such conditions it is wiser for the surgeon always to operate as for cancer. In the remaining twenty-seven cases the condition was mistaken at the exploratory incision. Now, ten per cent of unnecessary radical operations are nothing as compared with five per cent incomplete operations for cancer.

It is my opinion that, if we will all unite in this propaganda of the education of women as to the best treatment for a lump in the breast, the number of deaths from cancer of the breast will be tremendously reduced in a very few years.

Frederick L. Hoffman, Statistician of the Prudential Life Insurance Company, gives the following figures based upon the mortality records in Philadelphia between the years 1878 and 1903; the deaths from cancer of the breast were 1,684, or a rate per 1,000,000 of 128.89. This rate is only exceeded, and that but slightly, by cancer of the stomach and the uterus.

Dr. Bloodgood's article, Cancer Problem, Southern Medical.

The concentrated effort to ascertain the results of some five thousand cases of external cancer recorded in the Surgical Pathological Laboratory of the Johns Hopkins Hospital, was made possible this summer through the generosity of a few friends and patients.

The amount was about twelve hundred dollars. This was used to pay the salaries of two stenographers and the board and living of a number of students. These students, members of the third and fourth year medical classes of the Johns Hopkins University, volunteered their services, only their living expenses being paid out of the fund.

Letters were written to the patients and their physicians, and every effort was made to trace "lost cases." Incomplete clinical histories were made complete in many instances by writing to the patient or physician for the desired data.

In many of the cases the old sections were restudied and in others new blocks for sections made from the preserved tissues.

In every case in which there was any doubt as to the pathological diagnosis a restudy was made.

The investigation of the ultimate result is practically complete, except as to the lost cases.

I am very pleased to be able to announce that a generous friend of the University and Hospital has just given me one thousand dollars, which will be employed in an effort to trace the lost cases.

The material recorded in The Surgical Pathological Laboratory comes chiefly from Dr. Halsted's Clinic of the Johns Hopkins Hospital; but in addition we have received many cases from the Union Protestant Hospital, through the interest of Dr. Finney and his associates there. All the material of the Surgical Clinic of St. Agnes' Hospital is sent to this Laboratory for study and record.

In addition, a large number of cases have been received from surgeons, physicians and pathologists throughout the country. Many of these cases have been sent to the laboratory for diagnosis, but a very large number have been referred in order to aid us in this investigation.

It is a great advantage to have records from different clinics and different surgeons, as this allows the comparative study of methods of diagnosis and treatment which may not be alike.

The following is a list of articles, already published, which were made possible by this clinical research into the ultimate results after the operative treatment for cancer.

I wish to call attention to the fact that the number of cases and the per cent differ slightly in some of the articles.

This is due to the fact that lost cases are being traced, and as each publication is written we base the figures as they are up to the date of this publication.

So far the tracing of hitherto lost cases have improved the results.

A patient lost track of after his discharge from the clinic does not indicate death from cancer; even when the letter is returned marked dead, the cause of the death may have been due to a disease having no relation to cancer.

In these figures lost cases are not considered in the results; only in the total number of cases, in the per cent of pre-cancerous lesions, in the proportion of inoperable cases, and in the frequency of postoperative death.

This will explain the apparent discrepancy between the total number of cases and the number traced five years or more.

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Can it be Proved from Clinical and Pathological Records that the Number of Cures of Cancer will be Greatly Increased by the Proper Excision in the Earliest Pre-cancerous or Cancerous Stage of the Local Disease?

American Journal of Medical Science, January, 1914, vol. cxlvii, p. 76.

Read before the American Association for Cancer Research. Washington, D. C. May, 1913.

THE ACTION OF HYDROXYL ON BACTERIA.*

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THE factors entering into the production of changes in the cell are closely connected with metabolism, cell injury, cell death, and involve chemistry, physics, and electricity.

Chemical compounds are most conveniently classified according to their chemical properties into acids and bases. If these are brought together, they destroy each other's characteristic properties and give rise to the formation of a new compound differing entirely from the two. Reactions of acids and alkali in the body are based on the theory of dissociation. These reactions are dependent upon the activity of the positively charged hydrogen ion, in the case of acids, and upon the negatively charged hydroxyl ion, in the case of alkalis, so that the relative strengths of these substances are dependent upon the number of hydrogen and hydroxyl ions contained in a unit volume of the solution, and this number is determined by the degree of dissociation of the electrolyte under consideration. The ion, itself, represents a new species of molecule, viz., atoms or groups of atoms which are charged with a definite amount of electricity. Accepting this theory, the blood must be regarded as alkaline and this is due to the presence of negatively charged hydroxyl ions.

The isotonic relations of the blood do not depend entirely upon the presence of salts, but are affected also by the presence of diffusible principles as the albumens. Albumens, phosphates, and chlorids behave differently under changing osmotic conditions. When acid is added to the blood albumens and phosphates pass from the red cells to the serum, while chlorids and water pass from the serum to the cells, but when alkali is added the opposite transfer is induced.

If we reduce the amount of water in a regenerating or growing tissue we not only retard this process by reducing the volume of the cell and the mechanical effects of the intracellular pressure, but we reduce also the irritability of the protoplasm. This irritability has been shown to play an important rôle in the process of cleavage and, as regeneration and growth are functions of this process, we at once understand in which direction to look for their control.

The most poisonous ions are the hydrogen ions which have the lowest atomic weight and the greatest velocity of migration. The antitoxic effect of substances is a function of the magnitude and sign of the electrical charges of their ions. The living cell is susceptible to an increase in the activity of the positively charged hydrogen ion or the negatively charged hydroxyl ion. Its protein possesses strong affinity for both these ions, forming feebly dissociated salts with them. Carbohydrate in some form is absolutely essential for the synthesis of protein in the tissues. There are many examples in chemistry that demonstrate oxidation in an alkaline medium; that means a medium containing dissociated hydroxyl ions. Sodium Hydrate acts like a ferment in the presence of sugars, bringing about their slow combustion.

* Read before the Brooklyn Surgical Society, December 4, 1913, as a preliminary report.

Life is a property of matter, and the only form it takes in which we can appreciate this is in that of the cell. A study of the human cell leads us first to a study of the blood, and we learn, here, that there is a demand for a substance which will maintain its alkalinity, for a supply of negative ions, for substances which will neutralize the parenteral formation of poisons in the body or render them inert, for substances which will attack foreign material, parenterally, for a substance which will govern the absorption of water and salts by the cells, the diffusion of substances into them and their osmotic pressure, and for catalytic action. These demands are normally supplied, but when this fails the body becomes disordered or diseased. Hydroxyl is present as a dissociated ion in the blood and will answer most of these demands.

The action of Hydroxyl in the blood is:

1st. Its direct action on the heart and blood vessels. It contracts the heart and blood vessels as it draws the water and salts out of their cells.

2nd. Its action on the blood. Hb per cent is raised, coagulability is increased, the number of red blood cells is increased, the number of white blood cells is increased, the percentage of polynuclear leukocytes is raised, leukocytic extracts are increased. All cases treated with hydroxyl show these results, the blood often clotting in the pipette so as to prevent examination. Hemophilics show clotting after treatment.

3rd. Its action on the blood forming apparatus. The nucleated reds or normoblasts appear in the circulation, after treatment, showing stimulation of the red bone marrow and throwing into the circulation immature red blood cells from the nursery when there is no anæmia and the blood is normal.

4th. Its catalytic action, oxidizing sugar in the blood. This can be shown by treating diabetics.

5th. Its action on bacteria, destroying them in the blood and increasing antitoxine and opsonins.

HYDROXYL—METHOD OF ADMINISTRATION.

Hydroxyl ions can be dissociated from many chemical combinations. It is best, and safest, to dissociate them from sodium in sodium hydroxide. This can be administered to animals and the serum used, or it can be used direct. In solution the negatively charged hydroxyl ion is dissociated and represents a new species of molecule.

The intra-venous injection of this solution is followed by pallor, slowing of the pulse rate, dizziness, nausea, and drowsiness. Later there is ringing in the ears, looseness of the bowels, dryness of the throat, drying-up of congested and œdematous areas throughout the body. Chlorids are increased in urine.

ANIMAL EXPERIMENTATION.

Two normal guinea pigs were used, one white, the other brown and white; so they will be referred to by their color. The brown and white weighed 20 ounces, his temperature was $102\frac{3}{5}$, and polynuclears 5250. The following day he weighed 22 ounces, his temperature was $100\frac{3}{5}$, and polynuclears were 2940. He was given 1 cc. hydroxyl. For the next three days he varied weight 22, $21\frac{1}{2}$, 21 ounces; temperature $100\frac{2}{5}$, 101, $100\frac{4}{5}$; polynuclears 23,360, 19,570, 8540; the first two days, nucleated, red blood cells appeared, and disappeared on the third day. He was given $\frac{3}{4}$ cc. hydroxyl,

and during the following three days he varied in weight 20, 21, 20 ounces; temperature $99\frac{3}{8}$, 101, 101; polynuclears 18,460, 13,600, 10,666; the day after the first injection the blood clotted so firmly that it was difficult to get it to flow and prevent it from clotting in the pipette.

The white weighed 18 ounces, his temperature was $100\frac{3}{8}$, and polynuclears were 3125; the following day he weighed 18 ounces, his temperature was 101, his polynuclears were 4030, and he was given $1\frac{1}{4}$ cc. hydroxyl. For the next four days he varied weight 18, 18, $18\frac{1}{2}$, $18\frac{1}{2}$ ounces; temperature $100\frac{4}{5}$, $101\frac{2}{5}$, 101, 101; polynuclears 19,800, 17,950, 10,350, 4410; the first three days, nucleated, red blood cells were present and disappeared on the last day. The blood clotted firmly after the injection, as it did in the case of the brown and white pig.

BACTERIOLOGY.

Four tubes were prepared containing 50,000,000 staphylococci in $\frac{1}{2}$ per cent sodium chloride solution. One was used as a control. Hydroxyl was added to the others so as to give dilutions 1 to 1000, 1 to 2500, and 1 to 3000. After twelve hours, cultures were made from all of the tubes. At the end of twenty-four hours, the growths showed abundant staphylococci from the control, and none from the tubes treated with hydroxyl. There was, however, an abundant growth of a contaminating, non-pathogenic spore former, from all the tubes.

Four tubes were prepared in the same manner containing streptococci, another set containing typhoid bacilli, another set containing pneumococci, another set containing gonococci. One tube of each set was used as a control. Hydroxyl was added to the others in dilutions of 1 to 1000, 1 to 2000, and 1 to 4000. Nothing grew in any of the tubes except the controls, but contaminating non-pathogenic spore formers, and cocci.

In the animal body there is *no direct* chemical action on bacteria. It increases antibody, opsonins, and antitoxin, as well as the number of white blood cells.

The following cases show its action on the heart and blood vessels:

W. H. fifteen years old, has had repeated attacks of tonsillitis and two attacks of inflammatory rheumatism in the past three years, the last, during the spring of 1913, when he was in bed three months. Examined August 27, 1913. He was pale, and thin, temperature 101, tonsillitis, inflamed right ankle, a dilated and failing heart, Hb. 80 per cent, R. B. C. 3,800,000, W. B. C. 9000, polynuclears 47 per cent. X-ray showed dilated heart. Culture from throat grew staphylococcus, and streptococcus. He was given 10 cc. hydroxyl solution in the vein. At the end of the week his temperature was normal, inflammation had left his ankle, his throat had cleared, X-ray showed his heart diminished in size. Hb. was 85 per cent, R. B. C. were 4,000,000, W. B. C. were 16,000, polynuclears were 86 per cent. He was given 8 cc. more and recovered, gaining weight rapidly, but was left with a faint heart murmur.

S. M. age seventy-one. His father and an aunt died of cancer. He has had rheumatism, and heart disease, and sugar in the urine for some years. When I saw him he had heart murmurs with a dilated heartal, so shown by X-ray. His urine contained 1 per cent of sugar. He was given 20 cc. hydroxyl solution in the vein. At the end of a week the sugar had disappeared from the urine and

the X-ray showed the heart greatly diminished in size, and examination showed the dilatation gone.

The following cases show its action on malignant growths:

G. B. age seventy-one, came to me with a cancer of the tongue extending down to larynx and infiltrating the glands on the left side of the neck. It was inoperable. Hb. was 75 per cent, R. B. C. were 3,200,000, W. B. C. were 8500, polys were 55 per cent. I gave him hydroxyl solution every three to five days in the vein until he had received 76 cc. in twenty-eight days. The cancer began to disappear. Hb., R. B. C., polynuclear per cent increased steadily. At the end of two months Hb. was 92 per cent, R. B. C. were 4,200,000, W. B. C. 40,000, and polys 95 per cent. He died of an embolus. I have the sections of the tongue here, to-night; they show the changes that took place. These changes were degeneration of the cells, destruction taking place first in the nucleus, and a polynuclear infiltration to dispose of the waste material.

Mrs. H. age fifty-five. In 1898 an alveolar carcinoma started in her right breast. Dr. Coley used the X-ray in 1902. It continued to grow and when I saw her it had ulcerated and grown so as to extend down on the abdomen. Hb. was 62 per cent, W. B. C. were 9000, and polynuclears were 56 per cent. I have given her 70 cc. hydroxyl solution in addition to injecting the tumor. There is only a small granulating surface left, and the tumor is gone. The sections of this growth that I have here, to-night, show practically the same changes as those of the tongue. The polynuclear leukocytosis produced in both these cases, as well as the general improvement of the blood, has a very important bearing on the disappearance of the tumor and gain in weight.

The following cases show its action on tubercle bacilli:

W. B. age thirty-seven. He suffered with tubercular disease of spine and hip joint in childhood and recovered with a crooked back and lameness. For the last five years he has had tubercular disease of the testicles. When I saw him he had large tubercular testicles with sinuses discharging pus. The bacillus was found in the discharge. His temperature was $100\frac{3}{5}$ and he weighed 103 lbs. I gave him 25 cc. hydroxyl solution in the vein, once a week for three weeks. The discharge diminished, and stopped, the sinuses closed, and the swelling disappeared leaving small hard nodules. His weight increased to 113 lbs. His temperature has been normal about two months. The case has been under treatment nine weeks.

H. B. age thirty-four. Had a sister die of tuberculosis of the lungs. Seven years ago she developed tubercular disease of the red bone-marrow of the right thigh and tibia. The knee was operated on and pus evacuated after it had broken through, into the joint. The disease quieted down for six years and then lighted up in the thigh. This was opened and the bone scraped. Sinuses were left which continued to discharge for about a year, when she came to me. Her temperature was 101 and there was pain and inflammation over the region of the right knee joint with considerable discharge. The X-ray that I have here shows the invasion of the red marrow of the femur and the upper end of the tibia. I gave her 10 cc. hydroxyl; in a week I gave her 14 cc., and in another week I gave her 16 cc. in the vein. The temperature became normal, the swelling went down, pain disappeared, and

the discharge ceased. The second X-ray shows the repair of both bones, the tibia having become almost normal.

F. A., age twenty-eight, came to my service at the Long Island College Hospital with a tumor at the sternal end of the left clavicle. The X-ray showed softening and destruction of the inner end of the clavicle sternum and first rib. He showed a positive Von Pirquet. I removed the inner third of the left clavicle with the tumor and scraped the rib and the sternum. I split the free end of the clavicle, turning the piece of bone over and grafting it into the defect. I then closed the wound. The tumor was opened and contained pus. The laboratory reported this to be tubercular. There was a small tubercule back of his right ear. I gave this man 10 cc. hydroxyl one week before the operation, 10 cc. thirteen days after the operation, 10 cc. two weeks later and 25 cc. two weeks later. The wound healed and the graft grew in without interruption. The series of X-ray slides show the progress of the repair. The tubercule back of the ear disappeared in five weeks and there has been no recurrence.

The following cases show its action on staphylococcus and streptococcus:

T. W. P., age fifty-two, had received an infection of the dorsum of the right foot two weeks before consulting me. After a few days a sore appeared over the right patella, and a little later another appeared over the right clavicle. When I saw him, the sores of the foot and knee were discharging. I made cultures from these sores. They both showed mixed growth of staphylococcus pyogenes aureus and streptococcus, with the former predominating. His blood showed W. B. C. 12,000, polynuclears 80 per cent. I gave him 25 cc. hydroxyl solution in the vein and dressed the sores. In a week they were well. The next day after the injection W. B. C. were 20,000 and Polynuclears were 90 per cent. He had a temperature of 101 when he first came, and that went down the following day. At the end of the week the sore over the clavicle had gone down leaving a hard spot as big as a small pea. I cut this out and opened it, macerated it and inoculated a culture tube. This grew staphylococcus and streptococcus, as the other sores did. He has had no sign of infection since.

J. L. B., age fifty-five, subject to attacks of rheumatism. Had an infection of his left leg ten days ago, followed by a sore in the right lumbar region. When I saw him he had a temperature of 102, spots of infection on his right leg, and a large carbuncle in the right lumbar region. White blood cells were 18,000 and polynuclears were 69 per cent. I made cultures from the leg and the back. They grew streptococcus. I removed the carbuncle. I gave him 25 cc. hydroxyl solution in the vein. I saw him in three days. His temperature was normal, W. B. C. were 25,000; polynuclears were 81 per cent. The infection had disappeared from the leg and back and the wound was closing rapidly by the end of a week.

Mrs. C., age thirty-five, had osteomyelitis of the left tibia with non-union. The culture grew staphylococcus. The bone cleared up, resection was done and not very firm union obtained, leaving a discharging wound. Vaccines were used but the condition remained, getting worse at times with the staphylococcus persisting. Finally, after a year and a half, I gave her 15 cc. hydroxyl solution in the vein. In five weeks the temperature was normal, the infection gone, the wound healed, and the bone firmly united.

I have given her 25 cc. since and she has remained well for eight months.

H. G. K., age twenty-eight, since 1907 has had a staphylococcus infection at the back of his neck. Areas were cut out and burned out with carbolic acid. In 1912 he took autogenous vaccine treatment for three months with but slight benefit. This injection started at 200,000,000 and was run up to 500,000,000. He came to me with a raised, infected area on each side of his neck. A culture showed staphylococcus pyogenes aureus. There were 8000 leukocytes, sm. mono. 42 per cent, large mono. 7 per cent, polynuclears 49 per cent, eosinophilies 2 per cent. This showed a polynuclear leukopenia. It accounted for his low resistance which had not been very much changed by the vaccines. I gave him 25 cc. hydroxyl solution in the vein. He returned at the end of a week. The lumps had subsided somewhat. His leukocytes were 10,000, sm. mono. 31 per cent, large mono. 7 per cent, polynuclears 61 per cent., Eos. 1 per cent. I gave him 25 cc. more, in the vein, and he returned at the end of a week. One lump was about gone, the other was smaller and fluctuating. I opened this and evacuated five drops of pus. A smear of the pus showed it loaded with polynuclears and no bacteria. A culture failed to grow. His leukocytes were 13,000, sm. mono. were 25 per cent, large mono. were 5 per cent, and polynuclears were 70 per cent.

H. A. C., age forty-six, has had diabetes for a number of years. Three weeks ago he injured his left index finger; it broke down, became infected, and finally gangrenous. One week ago infection appeared at the back of his neck and the back of his head. A culture from all these sores grew streptococcus. I found on his first visit that he had $2\frac{1}{2}$ per cent of sugar in the urine. I gave him 16 cc. hydroxyl solution in the vein. Two days later I sent him to the Long Island College Hospital, cut off the finger, and cut out the carbuncle on his neck. Eight days later I repeated the 16 cc. injection. The sugar had gone down to .7 per cent, the wounds were clean and closing rapidly, and the sore on the back of his head had disappeared. One week later his wounds were healed and the sugar was down to .3 per cent. Later the sugar disappeared. The leukocytes were 10,000 and polynuclears 60 per cent; after the injection the leukocytes went up to 18,000 and the polynuclears to 87 per cent.

CONCLUSIONS.

Alkalinity is a basic principle of life.

The presence of negative hydroxyl ions in the blood depends on the fundamental principle of dissociation.

The negatively charged hydroxyl ion is effective in malignancy and free from the injurious effects of the emanations from radioactive substances and the X-ray tube, due to positive ions.

The antitoxic effect of the hydroxyl ion is a function of its negative sign.

A given quantity of hydroxyl will not only oxidize a fixed quantity of sugar in the body, but it will keep on oxidizing until large quantities of sugar are taken care of due to katalytic action.

A given quantity of hydroxyl will not only neutralize a given quantity of toxine in the system, but it will keep on neutralizing until large quantities are rendered harmless. This due to its action on the W. B. C.

Hydroxyl will increase hæmoglobin per cent, the number of

red and white blood cells, and raise the polynuclear per cent without any negative phase.

Hydroxyl will tone up the heart and blood vessels in dilatation and morbid relaxation. It withdraws water from the cells of their walls.

Hydroxyl will increase the coagulability of blood.

Hydroxyl will correct oedema due to acidity and cause water and chlorids to pass out, and albumen and phosphates to pass into the cells.

Abnormal accumulations of water affect all the cells and interfere with their function. This is one of the conditions in malignancy. The proper balance of the interchange of albumens, salts, and water restores function to cells, and in tumors reduces their size and the mechanical tendency of the cells to divide.

A solution of hydroxyl need not be considered in isotonic relation to the blood. Its action is dependent solely upon the activity of dissociated *Hydroxyl Ions*.

The alkalinescence of the blood is measured by its content of *Hydroxyl Ions*.

According to Hiss, a bactericidal animal serum will destroy pathogenic bacteria without affecting non-pathogenic bacteria. A disinfectant destroys both. Hydroxyl shows a selective affinity for pathogenic bacteria and does not kill non-pathogenic bacteria nor the healthy blood cells. This remarkable fact brings it into close relation to animal sera.

Hydroxyl produces active immunity.

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SIMPLE ANEMIA WITH RELATIVE FAILURE OF VASOMOTOR TONE.*—REPORT OF A CASE.

Robert E. Coughlin, M.D.,

Brooklyn, New York.

THE following case report illustrates the importance of taking the systolic and diastolic blood pressure and the pulse rate in the horizontal and vertical positions in a patient who presented all the signs and symptoms of simple anemia.

Miss E. D. Age, twenty. Occupation, envelope addresser. Family history: Father died of tuberculosis. Mother died at the age of fifty-three of pneumonia after a few days illness. One brother died of tuberculosis at the age of thirty. One sister is afflicted with lupus. One brother is in poor health at the present time. Two other sisters are alive and well.

Patient is slight in build weighing less than 100 pounds. When a growing girl she was rather robust, but after her sixteenth year, when her menstrual function became established she began to fail in health. Her physician said she was anemic. Under treatment there was some improvement but her former robustness never returned. A few months ago first noticed that when she assumed the upright or standing position she had the sensation of inability to remain on her feet. Said she felt like falling. While in the recumbent posture she was apparently comfortable. Had no headache. Did not feel dizzy, but had the feeling that her lower extremities would not sustain her in the upright position. Early in November of this year, while returning from her place of business, she suddenly collapsed in the street near her home.

Examination showed the following condition present. Heart sounds normal, except a slight hemic murmur over the pulmonic

* Read before The Brooklyn Society of Internal Medicine, December 26, 1913.

area. Kidneys normal. Lungs normal. Reflexes normal, except some exaggeration of patella reflex. Mucus membranes pale and anemic.

A comparison of the pulse rate and blood pressure in the horizontal and vertical positions showed the following:

Reading A.	Pulse Rate.	Blood Pressure	
		Systolic.	Diastolic.
Horizontal	108	95	60
Vertical	120	80	50
Difference	+12	-15	-10
Percentage record, 15.			
Average pulse pressure, 32.			
Hæmoglobin, 40 per cent.			

Here was a clue to our patient's collapse in the street. Owing to the fact that her blood pressure was so low in the vertical position she was absolutely unable to continue her journey homeward. She declares she is positive she did not faint and there was no loss of consciousness. Her lower limbs simply gave out and she sank down. This all frightened her so much that she lost her power of speech temporarily.

Treatment.—Complete rest in bed in the horizontal position, without pillow or head support. Nourishing stimulating food. Milk punches once daily. Iron and strychnine internally. A little bromide of soda and ammoniated tincture of valerian were given the first night for the extreme nervousness.

After two weeks' complete rest in bed an examination showed the following:

Reading B.	Pulse Rate.	Blood Pressure	
		Systolic.	Diastolic.
Horizontal	84	127	95
Vertical	124	125	90
Difference	+40	-2	-5
Percentage record, 25.			
Average pulse pressure, 33.			
Hæmoglobin, 40 per cent. (Blotting-paper method.)			
Treatment continued. Complete rest in bed.			

Examination on December 9th. Symptoms, objective and subjective, all improved. Patient ate and slept better than she had for months.

Reading C.	Pulse Rate.	Blood Pressure	
		Systolic.	Diastolic.
Horizontal	84	130	95
Vertical	106	130	90
Difference	+22	0	-5
Percentage rate, 50.			
Average pulse pressure, 37.			
Hæmoglobin, 60 per cent.			

Was allowed to get up and go around the house. In a few days was allowed to go out doors, it being the belief of the writer that there would be a better therapeutical effect from the exhibition of the iron if the patient could get more oxygen, as she would if she went out doors. Her condition here seemed quite good, though there was a drop of five mm. in the diastolic reading when she assumed the erect position. Her pulse rate was only increased 22 beats and there was no fall in the systolic reading under the same conditions.

Examination on December 16th. Said she had been very well and was positive that she was gaining in weight and getting stronger every day.

Reading D.	Pulse Rate.	Blood Pressure	
		Systolic.	Diastolic.
Horizontal	96	110	60
Vertical	108	110	60
Difference	+12	0	0
Percentage rate, 65.			
Average pulse pressure, 50.			
Hæmoglobin, 60 per cent. (Blotting-paper method.)			

Examination on December 22, 1913. Patient said she had not felt quite so well. On December 20th she was taken with a severe occipital headache, which was relieved when she assumed the recumbent posture.

Reading E.	Pulse Rate.	Blood Pressure	
		Systolic.	Diastolic.
Horizontal	88	115	80
Vertical	96	115	80
Difference	+8	0	0
Percentage record, 70.			
Average pulse pressure, 35.			
Hæmoglobin, 60 per cent.			

On December 21st there was a resumption of the menstrual function, after an absence of over one year. The flow was natural in character, amount and duration. She was menstruating when reading E was made. Medication was discontinued during this period, but was later resumed.

General Considerations.—C. Ward Crampton, M.D., in *New York Medical Journal* of November 8, 1913, in a very comprehensive article under the heading, "Blood Ptosis, A Test of Vasomotor Efficiency," states that tests along this line have been put into practice by such men as R. Tait Mackenzie, M.D., George H. Meylan, M.D., and others interested in athletics for the purpose of determining the fitness of athletes for "permission to compete" and for other purposes. Crampton does not consider the diastolic pressure in making his percentage record in which he states that a pulse rate increase of four and a blood pressure systolic raise of ten make a reading of 100 per cent.

So far as the writer is aware this test has never been applied to a consideration of the sick as a clinical aid to diagnosis and treatment. In the patient reported the vasomotor test made the treatment easy and as easily explained the symptoms present before she was compelled to take to her bed.

It will be noticed that when she took to her bed her systolic and diastolic blood pressure were lower in the vertical than in the horizontal position, while there was a rise in the pulse rate of 12 beats. This was when her hæmoglobin was low. After two weeks in bed conditions had changed. The systolic blood pressure was found to be two mm. lower in the vertical than in the horizontal position. An improvement had taken place, however. The diastolic was still lower in the vertical than in the horizontal position, but an improvement had taken place here also. The pulse rate still showed great weakness, a difference of 40 being present. In the horizontal position the pulse rate was very good. The hæmoglobin was found to be the same. After two more weeks in bed, under the same treatment, we noticed a great

improvement on December 9, 1913. While there is a difference of 22 in the pulse rate in the horizontal and vertical position, the systolic blood pressure now remains the same, namely, 130. There is still a difference in the diastolic blood pressure but this is very slight. The hæmoglobin had now gone up to 60 per cent. The patient felt finely and was allowed to get up and go about. On December 16th there was further improvement. There was no difference in the systolic or diastolic blood pressure in the horizontal and vertical positions. The pulse rate was slightly increased. Hæmoglobin was unchanged. It will be noticed that the blood pressure had dropped after patient was allowed to get out of bed from 130 to 110. Still there was no difference in the two postures.

Erlanger and Hooker have shown that the diastolic or minimal pressure usually rises considerably and the pulse pressure always decreases, upon standing, after having lain down. The pulse rate increases accordingly. They have shown that these effects are entirely due to the rule of gravity. In Reading A the diastolic blood pressure was not raised from the horizontal to the vertical positions. The pulse pressure was decreased. Pulse rate increased. Reading B indicates no rise in the diastolic blood pressure. Slight rise in pulse pressure, with marked rise in pulse rate. Reading C shows no rise in the diastolic blood pressure under the same conditions, but there is a slight rise in pulse pressure, with considerable difference in the pulse rate. Readings D and E show no rise in the diastolic blood pressure, or loss in pulse pressure, though there is still an increase in the pulse rate.

None of the readings show any rise in blood pressure upon the patient assuming the standing position. In contrast we note that all the readings show an increase in the pulse rate under the same conditions. This is what we should expect to find in one damaged by disease, overwork, unhygienic living or weakened by inactivity.

It is very interesting to note that there was a very consistent and gradual rise in the average pulse pressure. The first reading shows an average pulse pressure of 32. Reading B shows an average pulse pressure of 33, which, in comparison with the other data, would suggest a very slight improvement in our patient's condition. Reading C shows an average pulse pressure of 37. This was when all the symptoms were improved and when the systolic blood pressure was high, namely, 130. Reading D shows the blood pressure generally reduced, but the average pulse pressure is 50, which approaches the normal. This was when our patient was at her best.

So far as the writer is aware, no one has ever taken a reading of the average pulse pressure in the horizontal and vertical positions. The writer would advocate the following as the result of his observations:

In every patient who complains of weakness or shows any symptoms of debility we should make a careful reading of the pulse rate and blood pressure, making a comparison of the systolic and diastolic readings in the horizontal and vertical positions. If the systolic and diastolic blood pressure rise when the patient is in the vertical position, with little or no increase in the pulse beat, the patient's condition, as regards vasomotor tone, is excellent. If there be no rise in systolic or diastolic blood pressure, with increase in pulse rate upon assuming the upright posture, our patient is not in excellent physical condition as regards vasomotor tone. If the systolic and diastolic blood pressure fall on assuming the vertical position, with an increase in the

pulse rate above five or ten beats per minute, the subject should be instructed to go to bed, lying in the horizontal position without pillow or other head support until there is improvement along the lines pointed out in the case under consideration.

REMARKS ON OBSTETRIC WORK AS CARRIED OUT AT THE KINGS COUNTY HOSPITAL.*

A. M. Judd, M.D.,

Brooklyn, New York.

WE have believed it valuable as a protective measure for the other new-born babes, to have smears made from every eye showing any discharge whatsoever, whether the case clinically was suspicious of gonorrhea or not. Very often we have found only the ordinary catarrhal discharge resulting from the thorough use of the one per cent silver nitrate by the nurse, but occasionally where clinically the case was certainly not gonorrhea we have been surprised by the laboratory report of "Gram negative, intra-cellular diplococci present." We now believe that in those cases it is not the gonococcus, but the micrococcus catarrhalis, that is present as the latter differs from the former bacteriologically in nothing but cultural characteristics. We are now having cultures made of all those discharges from the eye where there has been a positive report made of diplococci being present before sending such case to the eye department, where many cases are under treatment which have been proven both clinically, and otherwise, to be gonorrhea, thus avoiding probable infection in that department or perhaps legal complications. The few cases that we find returning positive smears from cervix, vagina, or urethra, are also being made the subject of culture, but the work is too new to make any reports upon it. By far the larger number of our pelvic deformities deliver themselves without Cesarean or forceps, the patient being given a thorough test of labor, encouraged to use her powers to the utmost aided by posture to increase the diameters of the inlet or outlet as the case may be, and aided also by the judicious use of morphine. Inertia, in the absence of contraindication, is combatted with pituitrin. We have had repeated demonstrations of the value of these measures where we could, without much criticism, have resorted to the section.

This topic will be treated more at length at some future time by one of the associates.

We have followed the let alone policy in the few cases of sepsis that have come under our care. A thorough examination, including cultures from uterus, cervix and vagina, blood count and cultures, eliminative and supportive measures, with postural drainage and no douches, have kept our mortality down. The very numerous cases that come to us in the second stage of labor after repeated examinations or after futile attempts at delivery in mal-presentations, are treated, as soon as delivered, by the Fowler posture, and while the lochia often is found to be offensive, chart after chart could be shown with an almost flat temperature.

Blood pressure is taken on every patient as part of the routine ante-partum examination, and wherever an increase is shown over

* Read before the Brooklyn Gynecological Society, January 2, 1914.

the proper pressure for the duration of pregnancy, the patient is put to bed, on a milk diet, elimination begun and a search for the cause of elevation instituted. In this way we believed we prevent trouble in many instances. Urines are examined weekly on every patient on the waiting list, and this, too, we believe to be very valuable as albuminuria or other defect is detected at the outset and managed properly.

A chemist in our laboratory is a new departure, making it possible to have done for us complete chemical examinations of urine as is required in toxæmics, with special attention being paid to the nitrogen ratios effecting especially ammonia, four per cent urea and undetermined nitrogens.

The serum diagnosis of syphilis has in no department of practice proven of more value than in that of obstetrics. Further, the routine examination of all antepartums for the Wassermann test, wherever possible, is strongly urged, as latent syphilis may be shown in no other way. For some time this has been carried out at the Kings County Hospital and more recently at the writer's suggestion the routine examination of fetal serum as obtained from the severed umbilical cord at birth, both procedures with the happiest, though not always conclusive results.

The percentage of plus reactions varies with the period of the disease, and whether the infection is acute or latent, hence primary cases where lesion is present less than two weeks usually show, while if sore is present over four weeks, seventy-five per cent plus is found. Secondary syphilis, with symptoms, gives plus in ninety per cent, and tertiary, in seventy-five per cent. Latent syphilis shows seventy-five per cent plus. The few other diseases, such as pneumonia, malaria, the tubercular type of leprosy and yaws which give plus reactions, can readily be excluded.

The test was made 312 times in our wards, of which 281 were negative, 31 positive (10.6%), and 8 not examined. Twenty-five of the thirty-one positive patients examined had no visible lesions and would have been overlooked but for the routine Wassermann; twenty-three of these thirty-one were delivered of living children, and but six of the twenty-three had received no treatment for her syphilis. How many of the remaining seventeen, that were delivered if untreated, would have similarly delivered themselves of living children can only be conjectured.

The treatment varied from "606," to mercury, by inunctions and hypodermically. Those admitted in labor whose Wassermann were plus post-partum received treatment before discharge in the majority of cases. Every pregnant woman with syphilis, whatever the period of gestation and in the absence of contraindications in kidneys and eyes will receive "606."

Of the living children (twenty-three in number) all were born without lesions, and but three of the twenty-three had a plus Wassermann; three were not examined for this reaction as that was not a part of the routine at the time of their birth.

Two of the five still births presented definite specific lesions; while of the remaining three, one of the mothers had nephritis, so possibly her dead and premature babe was the result of the nephritis; the other two deaths can safely be attributed to syphilis.

The history of miscarriages was of doubtful value, twelve of the thirty-one positive cases recording that accident one or more

times, while the remaining nineteen were either primigravida or had borne living children, with no miscarriages.

Bat and Daunay consider that a solitary negative in pregnancy does not mean surely that syphilis is absent, but one positive is evidence of certain maternal and probable fetal infection, and indicates the necessity of active treatment.

The results of Bat and Daunay agree with those of the writer. In the babes the large majority of cases positive at birth later develop symptoms of syphilis, and the large majority of cases negative at birth remain healthy.

The precaution must be observed, however, that if the child has been delivered after an anesthetic has been given to the mother, or the ingestion of alcohol by the mother, the test on either mother or child must be postponed for fully twenty-four hours.

Antisyphilitic treatment during pregnancy can result in the birth of healthy children and such children are free from syphilis and may be quite healthy or show various defects. The treatment of syphilis during pregnancy is the same as at any other time.

The author differs in his opinion from those who state that the existence of a pregnancy is a contraindication to the use of salvarsan, and adopts the attitude of Von Zeisl, who states that because of the rapidity of its action, it seems especially suited to syphilitic pregnant women, with a view to the prevention of abortion and the delivery of a sound child.

(For discussion see page 195.)

THE TREATMENT OF HEMORRHAGIC CONDITIONS IN THE NEW-BORN.*

L. J. J. Commiskey, M.D.,

Brooklyn, New York.

ABOUT five years ago my attention was drawn to an extremely fatal condition that occasionally occurred among the new-born infants; I have reference to the so-called spontaneous hemorrhages of the new-born. The etiology, according to the literature up to that time, was given to many causes, and varied with different observers. Some of the causative agents given were as follows: trauma at birth, ulceration of the gastro-enteric mucous membrane, too early ligation of the cord, hemophilia (hereditary), syphilis and sepsis. At the present time it can truthfully be stated that practically all the cases are due either to syphilis, sepsis, or general blood or vessel changes. The consideration of this condition does not include the cases of vaginal bleeding in female infants, as this bleeding is not severe and has been classified by competent observers as physiological.

The determination of the coagulation time of the blood has given some interesting results, but as yet no definite conclusions can be drawn from them except as follows: the coagulation time varied from normal to no clot in one-half hour. In some cases where coagulation was present, the clot formed was loose meshed and clot retraction was absent. The addition of calcium chloride, in varying amounts, to the blood of the infants tested in no case

* Read before the Brooklyn Gynecological Society, January 2, 1914.

aided the clot formation; therefore calcium chloride was not absent or deficient and under such circumstances its use in the treatment would seem unscientific.

The bleeding may be slight and continuous or intermittent, or it may be profuse and rapidly fatal. The site of the hemorrhage also varies considerably; it may be external, subcutaneous, or into the internal organs. The profuse rapidly fatal hemorrhages are usually of the latter variety. The onset is within the first two weeks of life, most commonly from the second to the fourth day. The diagnosis is easy or not depending to a great extent upon the source of the bleeding. The prognosis until recently has been absolutely bad, practically all of our earlier cases having died, but since the present method of treatment has been instituted the outlook is decidedly improved.

The treatment at present used in the Kings County Hospital is as follows: It consists of the subcutaneous injection of normal human whole blood. The blood is usually taken from a vein of the forearm by means of an exploratory syringe and is injected into the tissues of the infants back, before it has had time to clot. The quantity used is from 20 to 30 cc. every six to eight hours. The blood is generally obtained from one of the parents or relatives.

The advantage of whole blood is that it can be easily and quickly obtained, can be used immediately and requires no complicated apparatus. Since hemorrhage in the new-born is due to apparently different conditions it seems an advantage to inject whole blood which contains all the elements essential for coagulation.

The use of whole blood has been objected to on hypothetical grounds, that the red cells must be broken up and excreted and in consequence an extra strain put upon the organism. From practical experience with the method, however, this objection is of no real importance. The blood is quickly absorbed—usually in from two to four hours—and for some reason does not clot in the tissues. In no instance has there been any harmful influence. Injections of whole blood have been given to feeble premature infants with a decidedly beneficial effect. I also gave injections to a number of extremely marantic infants; the pulse, temperature, respirations, and weight were carefully watched and the urine examined. In no instance was there any deviation from the previous condition.

If it is true, as is believed at present, that human blood or its derivatives are of value in the treatment of hemorrhage, it seems only rational to assume that transfusion is the ideal procedure. The disadvantage, however, is that transfusion requires a great degree of surgical skill which can not be obtained at all places and at all times. In the type of case with profuse and as a rule rapidly fatal hemorrhage no treatment except an immediate transfusion can offer any hope.

In the majority of cases which are not of the rapidly fatal type it would seem preferable to use whole blood as the initial treatment and to continue its use if beneficial. If after a fair trial, however, the hemorrhage is not controlled, an immediate resort to direct transfusion would be indicated.

(For discussion see page 195.)



EDITORIAL



GEORGE McNAUGHTON, M.D.

TO the present and passing generation of physicians of Brooklyn, the name of McNaughton has stood for much, in sturdy and large personality, in consulting and private practice, in hospital work and organization, and particularly in the advancement of the interests of the medical profession.

In the shadow of his departure and with the brief allotment of space it may not be possible to estimate his accomplishments fairly. But it is not too much to say that he did more for the profession of Brooklyn and Long Island than has been accomplished by any other individual. One concrete example of what can be done, such as has been furnished in the noblest way by the subject of this sketch, has, besides its immediate results, more of instructive value than has any amount of preaching and criticism.

Dr. McNaughton was born of Scotch parentage at Mumford, Monroe Co., N. Y., July 4, 1856. His preparatory schooling was obtained in his native village and the adjacent town of Caledonia, and by private tutor, in a community that collectively might have been termed New Scotland. No school laboratory ever supplied such intellectual pabulum to oncoming youth as did the epoch-making experiments of Seth Green, at the beautiful creek a few steps away, in developing the now universally applied methods of fish culture. This heredity and this environment give us a clue to the early sources of his strong individuality. "It is not time that teaches wisdom, but nature and early training," saith the classic.

According to the manner of the time he began medical studies with a preceptor, Dr. R. J. Menzie, of Caledonia, a man still active. He then became a pupil of the late Dr. James R. Wood, of New York City. During his college years he passed through a very severe attack of typhoid fever; and from our knowledge of recent years it is likely that the condition to which he finally succumbed dated back to this infection. He graduated from Bellevue in 1878. His internship was at the Jersey City Hospital (1878-79). He then practiced for about a year at LeRoy, N. Y., not far from his early home. In 1880 he removed to Brooklyn and took up the practice of the late Dr. James Stewart. From this time on his interests and work were entirely centered here.

The first step in his wider career was as Assistant and then Attending Physician (1881-85) at the old Central Dispensary—around which o'er-modest institution for years gathered much of the medical interest and tradition of the town. Here he became connected with a group of men with whom he ever after kept the closest relations.

He was an Inspector of the Department of Health (and the first civil service appointee) of the old City of Brooklyn for four years at the time when Dr. Raymond was developing the bureau on a modern basis.

He was in charge of the gynecological clinic at the Long Island College Dispensary from 1884 to 1891. From this he became associated with the late Professor Skene, as his assistant at the Hospital (1891), and retained this affiliation until the latter's death. In these ways he was afforded an opportunity for a thorough grounding in gynecological work and abdominal surgery. He became full Visiting Surgeon to that department at the Hospital (1896). And since 1906 he has been clinical professor of that subject in the teaching department of the Long Island College Hospital. He was active in this line at the Eastern District Hospital for some twenty years, the first fifteen as Attending Gynecologist and the last five as Consulting.

In 1893 he organized the gynecological division at the Kings County Hospital, and has since been one of the Visiting, and of late years Vice-President of the staff.

He was a member of the original board of five to arrange the medical staff of the Jewish Hospital; and from its opening in December, 1906, a member of its Conference Committee, and Attending Gynecologist. In 1912 he was advanced to Consultant in that department.

He was Consultant at the Long Island State Hospital, Flatbush, from 1899, and was also Consultant in his specialty at the Swedish.

A great and leading work was his introduction of intubation of the larynx to Brooklyn. He was, in fact, one of O'Dwyer's main supporters in the establishment of this method as a widely accepted procedure. Most of that work here was done by him, and often at large personal sacrifice. It was in this connection also that he did much to spread the Corbin method of treating diphtheria by calomel fumigations. All this became past history on the advent of the serum treatment.

He was, of course, a member of the Kings County (from 1881) and the New York State Medical Societies, the A. M. A., the New York Obstetrical Society, Brooklyn Medical Association, Pathological Society, Brooklyn Medical Club, the Harvey Society and Academy of Medicine of Manhattan, Caledonian Hospital Society, Physicians' Mutual Aid, and of various staff and alumni unions; a charter member of the Brooklyn Gynecological Society, and its President, 1894-95, and one of the organizers of the Associated Physicians of Long Island (contributing also its name) and of the Medical Library Association.

A delegate to the State Medical Society from 1892; member (1898) and chairman (1899-1901 inclusive) of its Committee on Ethics; and came to be regarded as an authority in that troublesome phase of our medical existence.

The work done by Dr. McNaughton for the Medical Society of the County of Kings was perhaps his monumental civic achievement. He began as Censor in 1891. When leadership was necessary in that organization many felt that his geniality and forcefulness would be invaluable. Defeated at first, his friends were subsequently successful in electing him Vice-President (1893) and then

for four years President of the Society. In this period and the following five years of Trusteeship, and as one of the final Building Committee of five, his untiring efforts, devotion and good judgment guided the Society in providing the medical world of Brooklyn with one of the finest homes and headquarters of the profession anywhere.

He had a very practical mechanical turn. This was shown in operative methods and improvements. It was also well evidenced by his devising of the ambulance coach. This was entirely original with him, but he did not consider it ethical either to obtain a patent or accept compensation therefor. It has since been adopted in principle by all the auto and private ambulances, and has become a general necessity in every civilized community.

He was not fond of writing, though admirably clear when he did essay any subject. A peculiar and interesting psychological observation in this relation may be worth recording. While he was left-handed for familiar things, yet when preparing a paper he found that his mental processes were far freer when he penned his thoughts with his right hand.

Most of his originality in his special field is known only to his associates and aids. Some attention has been attracted by his cases of ovaritis in mumps, and more by his early recognition of floating kidney, and especially his entirely original observations on the association of uterine fibroids with valvular leaks, the latter presumably having an etiological relation to the former.

He was a member of various clubs, mostly of the outdoor type, the old Williamsburg Athletic, the Crescent Athletic, the Field and Marine, the Triton Fish and Game, etc.

A member of Altair Lodge, F. & A. M.; and of the Masonic Club, and for a time of the Brooklyn Club.

Dr. McNaughton died March 17, 1914, of a chronic cardiovascular condition.

Of generous temperament, intensely American in his democracy, modern in his fondness for sports, camping, a fine horse, or foreign travel; affiliating with many of the best minds in the community; so clear a thinker that he could take positive ground; widely trusted as an adviser in multitudes of matters, an invaluable friend and a telling opponent, of quick wit in meeting the unexpected, with a peculiar maturity of judgment and ability to detect the unseen sides of a question—he is widely missed by many, and lamented by all who could appreciate his high qualities.

WILLIAM BROWNING.

THE SURGEON-GENERAL'S LIBRARY.

AMONG other matters now before Congress for consideration is a proposal to discontinue the Library of the Surgeon-General as a separate entity and to consolidate it with the Library of Congress. The advocates of this proposition doubtless assume that this combination will centralize the management and promote efficiency by placing two separate libraries under a single management. George Ebers once constructed a novel around the power of a word and showed how the variations of a single word

can sway the purpose and development of a man's life and character. Just now, two words, "Efficiency" and "Economy," are echoing across the country as the war-cry of so-called progress. The National Administration in its eagerness to do something that will be both efficient and economical has joyfully pounced upon the Library of the Surgeon-General and gleefully announces that it will economize by lopping off an independent administrative staff and promote efficiency by placing the Library in the care of the Librarian of Congress, all of which sounds fine and glitters speciously. Before taking this step, however, it might be well for them to consider whether there might not be some disadvantages in this proposed step; most of us have learned that the combination of commodities that we call the department store offers its patrons efficiency and economy—efficiency in prompt delivery and economy of effort—for a purchaser is spared many steps by being able to select for his varied needs from a single establishment. But the public has learned that the department store, while it has driven the independent dealer out of business in many localities, has not supplied him with a complete department to replace the retailer who dealt in one commodity only, and it is conceivable that, by making the great special Medical Library of the Surgeon-General a part of the Library of Congress, its individuality will be lost, its effectiveness hampered, and its pre-eminence impaired. Were there no other argument to advance why the Surgeon-General's Library should be left intact, the *Index Medicus* alone, should serve as a most cogent reason. This monumental work, representing, as it does, the complete index of all medical publications, has become the foundation stone upon which the superstructure of American medical literature is erected and through which American medicine reaches out to the world. Every medical library in the country depends upon it absolutely, and any interruption in its publication would be severely felt. It is difficult to see how the publication of this important *Index* could be continued uninterruptedly were the Library of the Surgeon-General's office to be closed and its activities taken up by the General Library. Gentlemen of the Congress, be advised and before taking a hasty step, consider the possible effects of what you propose to do.

H. G. W.

THE CRIMINAL TRAFFIC IN DRUGS.

THE Journal has once before called the attention of its readers to the folly of using drugs that do not measure up to the highest possible standard of purity. The subject is revived by a pamphlet recently distributed widely by the National Health Conservation League. The ingenious makeup of the pamphlet is in itself enough to attract attention without referring to its contents. The subject is further emphasized by the unhappy experience at the County Hospital at Los Angeles a month ago, when seven patients who had been treated by neo-salvarsan died from some unknown cause. Commenting editorially, the *Southern Californian Practitioner* suggested the possibility of deterioration in the drug, as the technic was shown to be careful and clean. Physicians, especially such as dispense their own drugs, are peculiarly open to the possibility of a repetition of this awful experience at their own

hands for the temptation to buy staple drugs cheap is very great. There are scattered through the country numerous concerns that make tablets and other pharmaceuticals, the very cheapness of which raises a suspicion that they cannot measure up to the full standard of purity. It may be taken for granted that the price charged by firms of established reputation seldom affords more than a fair profit and anything much cheaper is probably correspondingly inferior. There is a well authenticated instance in the experience of a Brooklyn physician who dispensed some tablets labeled $1/40$ grain strychnine sulphate, which had been purchased at a remarkably low price. The patient's husband, while under the influence of liquor, swallowed a handful of these tablets and was only pleasantly stimulated thereby. Subsequent investigation showed that he had taken at least twenty, which, had they contained the full dose, would more than likely have been fatal.

It is needless to go into the arguments against the purchase and use of unreliable drugs; the question is too obvious. The lesson to be drawn is that every conscientious dispenser of medicine, for his own sake, for the sake of his brother practitioners and for the protection of the public, should do his best to discountenance the peddling of drugs and confine his purchases to agencies that he knows to be reliable.

H. G. W.

THE JUNE MEETING.

THE June meeting of the Associated Physicians of Long Island will be held at Blue Point, Long Island, on Saturday, June 6th. A special train will leave Brooklyn at about 1 o'clock. The following tentative program is being arranged:

- (1) Scientific Session.
- (2) Recreations.
Athletic Sports.
- (3) Shore dinner.
Two good speeches.
- (4) Business Session.
- (5) Early train home.

The meeting will be held at a delightful spot at the water's edge.

Set aside Saturday afternoon, June 6th, for Blue Point.

OSTEOPATHY AND CHRISTIAN SCIENCE.

THE April number of the Journal commented editorially upon the usual crop of legislative assaults upon the license to the practice act. Since then, a bill to legalize the chiropractics and optometrists has failed, but both houses of the legislature have passed acts that virtually extend the privileges of unrestricted medical practice to Christian Scientists and Osteopaths. A hearing on the bill was granted by the Governor, April 13th, at which delegations of various medical societies and some lay organizations did their best to dissuade the Governor from signing them. It is

significant that these bills were introduced during the closing days of the Legislature, that they were called out of committee without an opportunity for a general hearing and were railroaded through to final passage before any organized opposition could be effectually brought to bear. The utter unfairness of the bills, the special privileges which they grant, the utter lack of restrictions as to qualifications, examination, etc., compared with the increasing rigidity of the requirements for a medical degree, stamp them as some of the most pernicious legislation that any body of lawmakers has yet attempted. It is incumbent upon every physician in the State of New York to see to it that he shall actively and unselfishly do his part at the next election to reward the gentlemen of the present legislature according to their deserts, for their utter unfitness to safeguard the health of the State of New York is made glaringly apparent by their willingness to railroad through bills that will permit Christian Scientists to treat contagious diseases unchecked, to negate the efforts of the Boards of Health and the Quarantine Department and to place in jeopardy the entire population, not only of New York State, but all the adjacent territory as well. This is only another argument for the establishment of a permanent bureau on legislation that the Journal has already suggested and which it earnestly hopes will some day be an accomplished fact.

H. G. W.





Society Transactions



TRANSACTIONS OF THE BROOKLYN GYNECOLOGICAL SOCIETY.

Stated Meeting, January 2, 1914.

The President, F. C. HOLDEN, M.D., in the Chair.

Presentation of Specimens.

Fibrosis of the Uterus with a Polyp.

DR. POLAK :—I desire to present these two specimens because of the similarity of the cases. Both specimens were removed from women who had passed the menopause. One has a history which shows that for a number of years preceding the menopause the periods had gradually lengthened and the quantity of blood lost was increased, and then she had her menopause after having several sharp hemorrhages. This was followed by a metrorrhagia. Her physician sent her to my service at the Long Island College Hospital. The physical findings and the history showed the existence of two distinct lesions: something in the wall of the uterus, to account for the menorrhagia, and something in the cavity to account for the metrorrhagia. The case was worked up by the students and a diagnosis of fibrosis, with the possible presence of a polyp, was made. The patient was operated upon and this specimen found. You will notice that the uterus presents a typical picture of a fibrosis, although the specimen is somewhat shrunken from the solution in which it has been preserved. If you will look, you will notice that around each individual blood vessel there is quite a thick layer of white fibrous tissue, showing that there is a fibrosis with more or less arteriosclerosis, while inside the cavity is the polyp which was the cause of the metrorrhagia.

Adenocarcinoma of the Uterus.

DR. POLAK :—The second case was sent to me by the same physician, and I may say that this doctor has been drilled in the thought that any bleeding near the menopause is significant of possible danger. He has sent five cases in the last few months, but this is the only one that has shown true malignancy. This woman was regular up to the time of the menopause when the flow ceased for a year. Then began a metrorrhagia which was characteristic; it was sanguineous and sero-sanguineous, and at once suggested the possibility of malignancy. The patient was brought into the Long Island College Hospital, and for demonstration purposes was curetted, the pathologist reporting adenocarcinoma. A complete hysterectomy was performed and the patient made a satisfactory recovery. The specimen shows what extreme degeneration may take place in the endometrium of the body without any lymphatic involvement. The patient was given oil and ether by the rectum for anæsthesia, 75 per cent ether, 25 per cent cotton seed oil, for the reason that she showed a pulmonary lesion that made this form of anæsthesia desirable. During the operation the narcosis was complete, except in the first few minutes when she received a few drops of essence of orange which was placed on the cone and the anæsthesia carried through in that way. There were two points of interest; one was that the oil anæsthesia produced an immense distension of the sigmoid, and it was almost impossible to keep the distended lower bowel out of the field of operation; the other point was that although the anæsthesia was given by rectum to avoid pulmonary complications, the patient developed a most acute pulmonary congestion after the operation.

DR. JUDD :—The manner of working out the history in the cases presented by Dr. Polak shows the effect of the teaching at the college. The method of anæsthesia is something I have not had an opportunity of trying, and I have hesitated about adopting it in the class of work I have been doing, because of the possibility of the complications mentioned by Dr. Polak.

The Use of Pituitrin.

I want to sound a note of warning from my own experience against the indiscriminate use of pituitrin. I draw my conclusions from factors observed in a case in my service at the Jewish Hospital. It was a three-months incomplete miscarriage, where attempts to make it complete by packing had failed; it was packed at intervals of twenty-four hours on two different occasions in the hospital, without bringing on expulsion of what remained in the uterine cavity. This patient had an old endocarditis with double mitral murmur, and at the end of the second forty-eight hours, with no pains, I asked to have the uterus repacked and administered one ampule of pituitrin, which was given at the time of repacking. Forty minutes later the woman went into an acute collapse with dilatation of the heart, and was with difficulty brought round. The conclusions are that blood pressure should be taken in all cases in which pituitrin is used, and to investigate the condition of the heart and arteries. In this particular case, with marked endocarditis, did the pituitrin, combined with the packing, cause a rapid rise of blood pressure and a backing up of the blood at the right heart and acute dilatation? The case recovered. Blood pressure was not taken. The patient was about thirty-five years of age.

DR. POLAK:—This case mentioned by Dr. Judd is very interesting. It is a question, however, if pituitrin has any place at this stage of pregnancy and for this purpose. Most of the investigators, so far as I have been able to understand, have found it useless in abortions with the internal os unobliterated. I have seen cases of rupture of the uterus from the administration of pituitrin at the time of labor, and I understand that Dr. Wade operated upon a case of this type this afternoon. In my discussion of the paper by Dr. Edgar, in Washington some months ago, the point I tried to bring out was that its use should be restricted to properly selected cases. It has its place in labor when there is good dilatation, when the head is in the brim of the pelvis and is engaged, and when we have an accurate knowledge of the diameters of the pelvic outlet. I am certain that pituitrin can cause premature separation of the normally placed placenta, and I have had two cases within the week that have had such a condition. The preparation of pituitrin put up by Parke, Davis & Co., is not nearly so strong as that made by Burroughs, Welcome & Co. I think the latter is three times as strong as the former. I used the Burroughs-Welcome preparation three or four weeks ago in a case before the membranes had ruptured. The uterine spasm was so great that I had to give one-half grain of morphia to relieve it.

DR. DICKINSON:—Pituitrin or, more properly, pituitary extract, is a quick ergot. Where ergot will take fifteen minutes to act, pituitrin will act in five. Long ago we learned that everything must be wide open or "operable" before ergot may be used with safety. Pituitrin is invaluable in those conditions where the head is crowning and the forceps have given out—a typically American situation; where the head is rotated; where the woman is exhausted, and the attempts to call out the reserves have been ineffectual with whiskey, strychnine, quinine and rest, and where chloroform has no effect. Then pituitrin acts like magic to call out the last pounds of push—efforts you think hardly could exist—and the use of forceps is saved. Or, one stage further back, where you have ample relative diameters and a fully dilated cervix, and it seems only a little more force is needed to complete the rotation or descent to the pelvic floor, and you have everything ready for a forceps application, *then* pituitrin is of the greatest value in changing a mid-pelvis to a low forceps operation. I disagree with Dr. Polak that the Burroughs-Welcome preparation of pituitary extract is three or four times as active as that put up by Parke, Davis & Company. I think it is about double the strength. As a third stage clasper and expeditor it works well as a side partner of ergot; pituitrin to provoke quick action, with ergot to maintain the grip.

DR. H. A. WADE:—To-day a case was admitted to my service at the Williamsburgh Hospital, in which there had been an ill-advised use of pituitrin.

History was as follows: Patient thirty years of age, para iii; labor started twenty-four hours previous to admission to the hospital; L. O. A. position; pains regular and of moderate force. After twelve hours of labor, cervix was dilated and membranes had ruptured spontaneously. Pain then stopped completely for three hours, after which the attending physician gave an ampule of pituitrin. Shortly after the administration of the pituitrin the uterine contraction became very severe, and almost continuous. On examination a well-marked contraction ring was made out, about one hand breadth above the internal os. An anæsthetic was then given and a living, but very cyanosed baby, was delivered by the aid of forceps.

After some delay the placenta was delivered. The patient rapidly developed symptoms of shock. She was then brought into the hospital.

A vaginal examination showed a rent extending through the left side of the lower segment of the uterus communicating with the peritoneal cavity.

An immediate abdominal section was made, and the cavity of the abdomen was found filled with clots: the rent extended through the uterus, well up into the left broad ligament and the bladder had been detached for quite some distance from the uterus on the left side. The uterus was removed and the peritoneum drained.

To-night, eight hours after the operation, the patient's condition is fair: pulse, 120; temperature, 99; respirations, 24.

DR. HOLDEN said that he had seen the effect of the pituitrin continued after the delivery of the child, and the os closed so that it was not possible to extract the placenta, although the placenta was detached.

DR. BEACH:—I should like briefly to report a case that I saw about one year ago. It was a physician's wife, primigravida, and the labor had gone on until there was a three-finger dilatation of the os, when there was an inertia of the uterus. Two ampules of the *Borroughs-Wellcome* preparation of pituitrin was given and the effect was terrific. The blood pressure jumped up from 140 to 190, with the woman writhing in the bed. It was necessary to administer a large dose of morphine to relieve the patient. I think the proper time is during the second stage of labor, never in the first stage, and never when there is rigidity, and only when there is at least three-finger dilatation.

DR. CARY:—At the Brooklyn Hospital there have been two cases where it was not possible to deliver the placenta after the use of pituitrin; in one case it was necessary to wait eight hours, and in the other fourteen hours, and manual extraction was required before they were relieved; the placenta in each case was not adherent. In cases of *Cesarian* section it has been the practice to use *ergotin* before the operation, but recently Dr. *Pomeroy* has been using pituitrin instead of *ergotin*. The pituitrin causes such a firm contraction of the uterus that it is only with difficulty that the serous coats can be brought together, and the stitches have cut before perfect apposition could be made.

DR. PFEIFER:—I had one case in which pituitrin was used where the placenta was retained. One other point is the effect on the child. In one case, a multigravida, the child cried steadily for three hours after delivery, and it seemed as if it had been subjected to a severe pounding. There was a spastic condition of the uterus, but the case came through all right.

DR. POOL:—In considering the pros and cons of pituitrin, one fact should not be lost sight of: that as its use increases the forceps operation steadily declines. This seems to me a distinct improvement, for while an over-rapid delivery may be induced by the use of this drug, with consequent injury to the pelvic floor, such injury is not likely to be as severe or extensive as that caused by forceps, especially in unskilled hands. There is a class of cases in which, while pituitrin may not effect the delivery of the head, it serves to force it down into the pelvis, and makes its delivery by low forceps easy and safe. It is, of course, not wise to advocate the promiscuous use of pituitrin when the head is not engaged, but it may be a valuable aid in some cases, when with normal position and proportion of the head, and a dilated cervix, the contractions fail. It may convert what would be a high forceps operation, with all its attendant dangers, into a low one, and permit delivery with the least traumatism.

DR. JUDD:—Most of the doctors have changed the line of the discussion from the point of the case reported by me. My case was a three-months abortion in which I attempted to make a new use of the remedy. The discussion has gone into the use of pituitrin at full term.

Puerperal Septicæmia.

DR. CARY:—I wish briefly to report a case of sepsis that was under my care at the Brooklyn Hospital recently. The patient was brought in on the ambulance on Tuesday preceding Thanksgiving Day. She was a Japanese woman, twenty-seven years of age, in her second pregnancy, and at the time of admission was well-advanced in labor. I made an examination, and she was delivered at about noon of Tuesday. The next day she had a temperature of 102 in the afternoon. The following morning the temperature had risen to 104, pulse 120, and the blood count showed 23,000 white, hb. 90 per cent. She spoke very little English, but she complained of some pain in the chest; her respirations were 40, and we were suspicious of pneumonia, although there were no definite symptoms in the lungs. The next morning she was about the same, but a rash, very much like a scarlatina, appeared over three-quarters of the body. The lochia had diminished considerably. For five days the tem-

perature remained about 104 to 105. She was seen by the visiting physician from the medical side who thought, possibly, it was a pneumonia, and others of us who listened at the lungs were inclined to agree with him. The abdominal symptoms were not very pronounced. The smear made in the earlier days showed chiefly staphylococcus. The patient died on the seventh day. The autopsy showed a general septicæmia; there was fluid in the peritoneum, and abscesses of both tubes. A culture showed streptococcus. No lung complication was found and the symptoms there were apparently due to the enlargement of the liver. In the history as to home involvement she had a friend who had had scarlet fever four or five weeks previous to her admission to the hospital. The question arises, in view of the fact that the patient began the temperature within twenty-eight hours after entering the hospital, is it fair to assume that the infection was received in the hospital, or was it present in the vagina when she entered? The blood culture was negative. The treatment was the Fowler position and stimulation. At the autopsy pus exuded freely from the tubes.

DR. DICKINSON:—It is a question as to how early a jump in the temperature can occur after the first examination.

DR. HOLDEN:—Some cases are never examined, and yet show a rise in temperature.

DR. DICKINSON:—I can report two cases who were not examined at all, and yet developed temperature.

DR. JUDD:—I will not attempt to interpret the point or time of entrance of an infection, but I have had one or two cases of my own that were not examined by me, and yet were septic. One case, the wife of a medical man in this city, a primipara, who was under the best aseptic care, and whom I did not examine. She had a rather violent labor and took care of it herself. I do not remember just how many hours after the confinement the temperature rose, but the case became septic. Another case I had was also a physician's wife. In this case I did not make an examination, but within eighteen hours after the labor she had a rise of temperature. I understood that an examination had been made before I reached the patient.

The program arranged by the Gynecological and Obstetrical Staff of the Kings County Hospital was then taken up.

1. "An Easy Method for Rendering Rubber Gloves Sterile, Dry and Powdered, and in a Sterile Envelope." Dr. Henry M. Mills.

Dr. Mills showed his apparatus for sterilizing, and read a paper explaining his methods, which was commented on favorably by Drs. Dickinson, McNamara, Judd, Pfeifer and Holden.

2. Progress in Modern Obstetrics, as exemplified by:

- a. "Treatment of Hemorrhagic Conditions in the New-Born."
- b. "Routine Wassermann Reactions in Mother and Child."
- c. "Blood Pressure Estimations in the Parturient."

Dr. Albert M. Judd and Dr. Leo J. J. Commiskey.

Dr. Commiskey read his paper on "Treatment of Hemorrhagic Conditions in the New-Born" (see p. 184), and Dr. Judd, his "Remarks on Obstetric Work as Carried Out at the Kings County Hospital" (see p. 182).

Discussion of Dr. Commiskey's Paper.

DR. HUMPHSTONE:—I have been very much interested in the method and in its practical utility, as well as the ease with which it can be adopted in an emergency. I have often wanted to ask Dr. Commiskey if he had seen any untoward effects either locally or generally, and what was the mortality.

DR. JUDD:—I have watched with great interest the work of Dr. Commiskey in these cases. There is one point that I do not yet understand, and perhaps Dr. Terry can elucidate it for me. That is the obtaining of the coagulation time of an infant's blood, the different methods by which it is obtained, and the practical value of the coagulation time as obtained by those methods, and whether it helps us out in treatment. Personally I do not believe it does. I wish to say that the only cases that have not been helped by this method of treatment are those where the hemorrhage has been so extreme at the outset that death rapidly resulted; hemorrhages in the intestinal tract or of the internal organs.

DR. DICKINSON:—In the present newer studies of the subject the coagulation time does not seem to mean much. There are five or six different factors, and regarding them, their relative importance, we are still in the air. It is a very promising subject though, and we who are dealing with uterine bleedings hope for results from all this study.

DR. TERRY:—I think that Dr. Commiskey is better prepared to answer

the question regarding coagulation time than I am. It is not a subject that we are investigating at the present time in the Kings County Hospital.

DR. COMMISKEY:—I have treated, so far, twenty-one cases with a mortality of seven, approximately 33 per cent. I might add that as a factor septic cases have been added to the mortality. I reported a case here, recently, where there was a hemorrhagic endocarditis with pneumococcus infection. The method I have used to estimate the coagulation time is that of the Hinman and Sladen modification of Milian. It consists in the use of a simple microscopic slide on which is placed a drop of the infants blood. The slide is placed over a glass of water at about the temperature of 100 to 105, as a hanging drop. It is watched for about three minutes when the slide is taken up and held by the end. If the drop hangs down on one side the blood has not coagulated, and the time of coagulation is estimated from the time the blood is drawn until the drop retains its normal contour, with the slide turned on end. The normal coagulation time is about four to five minutes. This method is practically accurate; others are more complicated, but give no better results.

There are many factors that enter into the coagulation of blood and at present its causation is a question of dispute. Whipple, of Baltimore, experimented with chloroform-poisoned bitches, and found that the fibrinogen is decreased in proportion to liver necrosis. The question of the use of chloroform for a mother has been considered, but with no results concerning the infant as we never could attribute the condition in the child directly to the chloroform given to the mother.

DR. COMMISKEY:—Regarding the Wassermann reaction, it was made a routine by me in the hospital in 1912, partly in order to have a supply of whole blood for bleeding infants. It was surprising to find a number of infants with a negative reaction where the mother showed positive. I had thought that the luetin reaction might show more than the Wassermann in the new-born, and we decided to try it, but none were positive in cases tried. One post-partum patient showed a Wassermann as well as a luetin reaction, but beyond that we have had no positive results, and I have tried it upon twelve patients. The infant, who came back to the hospital four months old, who showed a negative at birth, but positive at his second entrance to the hospital, showed a luetin four days after birth.

DR. McNAMARA:—Are we justified in labeling syphilis on a patient by one Wassermann test, or are we justified in deciding negative after one negative test? It is a question that may come up in a legal way and involves many points for consideration.

DR. TERRY:—I have been very much pleased with the presentation of Dr. Judd's paper and with the summary he has given of the results we have obtained in the Laboratories of Pathology at Kings County Hospital. In the laboratories we have very little opportunity of following up our results. We receive test tubes, we report our findings, and our work ends. From Dr. Judd's paper I have learned more about the significance of our reports than I have during the nine months in which I have been sending reports to the hospital.

With regard to the Noguchi luetin reaction let me say that Dr. Commiskey is in the best position to answer the questions regarding its effectiveness. I am under the impression, however, that he is not particularly impressed with the results he has thus far obtained with this reaction. If I am mistaken in this I should like to be corrected. In regard to the relative merits of the Wassermann reaction for syphilis, and the Noguchi reaction, I cannot speak from personal experience, for I was advised before leaving the Rockefeller Institute to employ the original Wassermann in routine examinations instead of the Noguchi. This advice I have followed.

DR. S. J. McNAMARA then presented a specimen with case report.

Specimen.—Carcinoma of the uterus and vagina, with exhibition of microscopic slides, showing the extent of disease and method of extension.

DR. McNAMARA:—This specimen of uterus and portion of vagina was removed from a patient thirty-eight years of age, a graduate nurse. She had no symptoms that aroused her suspicion of uterine disease until shortly before she presented herself for examination, at which time she stated that she had menstruated three weeks previously. Before that her menses had been regular and of normal duration. At that time, her general health being very poor, I felt that a removal by cautery would serve her best, and that was done. She went on her vacation, and about two months after the first application, cauterization was again practiced to a much less surface and extent than at first. I considered her beyond the point where we might expect the best results from operative work and resorted to the cautery as offering the best chance to limit the disease. Her general health improved; she increased in weight beyond all

her previous records, but did not feel able to resume her duties. The vaginal discharge increased. Her condition getting worse, I finally decided to subject her to a radical operation. At the operation we found that there were several nodules on the vaginal wall, and a good sized portion, about two inches, of the upper vagina was taken off with the uterus. The broad ligaments were split and, after ligation of the vessels, the tissues were separated and blunt dissection carried down, and sufficient of the vagina was loosened to get two sets of curved clamps around the vagina well below the disease. The vagina was cut between the clamps and the specimen removed without any of the sloughing cervix coming into view, or its contents soiling the wound. The paravaginal and parametrial tissues were carefully palpated for glandular enlargements or other evidences of the disease. The vagina was sutured before the clamps were removed and the general peritoneal cavity was walled off. Except for an infection in the abdominal incision she made a good recovery, and is now being subjected to X-ray treatment. She has no visible or palpable evidence of the disease anywhere, and I feel more encouraged with her condition than I ever thought I could be.

This case brings out strongly the necessity for a cancer educational campaign, even among professional and semi-professional workers. Many fear to seek the truth, and while this woman says she had no symptoms except her prolonged menstrual period, her friends say she did complain to them of pelvic distress. Upon my first examination, last July, she had a cauliflower growth half filling her vagina, with some sloughing. She was about to take a vacation, and to subject her to a radical operation would, I thought, be attended with too great a risk to her life. Upon her return an examination showed that the disease was present in both uterus and vagina. Her general health was much improved, but the cauterization was not followed by any benefit locally, and as a last resort, the patient being confined to her room and bed most of the time, I concluded to subject her to a radical operation. Many of my operative efforts on the cancerous uterus have been of doubtful value to the sufferer, and in a few the rapid recurrence has made me hesitate to advise operation in others. This case seems to open up a new field in cancer of the uterus, and while one must expect a higher primary mortality the results should be better, especially if X-ray can assist in the after-treatment.

DR. McNAMARA exhibited on the screen sections of the tissues showing the effects of the cancerous growth. The pathological specimens were explained by Dr. B. T. Terry, pathologist of the Kings County Hospital.

DR. MILLS:—I was present at the operation and I believe it was one of the most difficult operations I have seen for some time. I was pleased to see the specimen.

DR. McNAMARA:—In operating I pushed the bladder forward and kept it out of the way, and I did not cut without seeing just where I was cutting. The patient was a favorable case to operate upon, the abdominal wall was lax, and she was of spare build. I would advocate more radical operations in cancer cases. The primary mortality may be greater, but I think the results will be better.



Medical Society of the County of Kings

MONTHLY BULLETIN TO MEMBERS

APRIL, 1914

MINUTES OF STATED MEETING, APRIL 21, 1914.

The President, Dr. J. Richard Kevin, in the chair. There were about 320 present. The meeting was called to order at 8.30 P.M., and the minutes of the previous meeting were read.

Dr. Thomas Dixon called attention to the fact that at the March meeting he had read a resolution in support of an amendment to the public health law, making all dispensaries free to the poor, and that the President had referred him to the Committee on Legislation. With this correction the minutes were then approved.

Report of Council.

The Council reported favorably upon the following applications for membership:

Wm. Canfield Dean, 26 Palmetto St.; N. Y. Univ., 1897; proposed by C. D. Kevin; seconded by Membership Committee; February, 1914.

Francis J. Doyle, 151 Hull St.; L. I. C. H., 1912; proposed by C. D. Kevin; seconded by T. A. McGoldrick; February, 1914.

Wm. J. Flannery, 238 Arlington Ave.; Yale, 1901; proposed by J. R. Kevin; seconded by Membership Committee; February, 1914.

Emil F. Hartung, 358 Marion St.; L. I. C. H., 1884; proposed by C. D. Kevin; seconded by Membership Committee; February, 1914.

Edward Vincent McGoldrick, 115 Russell St.; L. I. C. H., 1902; proposed by T. H. MacKinnon; seconded by Membership Committee; April 1914.

Chas. H. L. Moseley, 929 Jefferson Ave.; N. Y. Univ., 1890; proposed by C. D. Kevin; seconded by Membership Committee; February, 1914.

W. Gray Phillips, Jr., 1899 Bedford Ave.; L. I. C. H., 1912; proposed by R. F. Barber; seconded by B. Harris; March, 1914.

John A. Quell, 1219 Dean St.; P. & S., N. Y., 1902; proposed by J. R. Kevin; seconded by Membership Committee; February, 1914.

Louis Schaefer, 1286 Carroll St.; Cornell, 1902; proposed by C. D. Kevin; seconded by J. A. Scannell; February, 1914.

For Reinstatement. (Former Members.)

Thos. V. Higgins, 982 Bedford Ave.; L. I. C. H., 1907; proposed by J. R. Kevin; seconded by Membership Committee; March, 1914.

Carroll L. Nichols, 232a Putnam Ave.; Cornell, 1904; proposed by J. H. Andrew; seconded by C. D. Kevin; March, 1914.

Election of Members.

The following, duly proposed and accepted by the Council, were declared elected to active membership:

John N. Balderson, 309 Decatur St.; L. I. C. H., 1908; proposed by C. D. Kevin; seconded by Membership Committee; February, 1914.

Dominie G. Bodkin, 897 Lafayette Ave.; P. & S., N. Y., 1899; proposed by C. D. Kevin; seconded by Membership Committee; February, 1914.

Walter J. Brinkerhoff, 180 Willoughby Ave.; L. I. C. H., 1892; proposed by C. D. Kevin; seconded by Membership Committee; February, 1914.

James A. Cooley, 552 Pacific St.; Cornell, 1908; proposed by D. F. Lucas; seconded by A. M. Judd; February, 1914.

John J. Dooling, 31 Van Buren St.; L. I. C. H., 1899; proposed by C. D. Kevin; seconded by Membership Committee; February, 1914.

Wm. Frederick Drescher, 289 11th St.; L. I. C. H., 1912; proposed by S. H. Lutz; seconded by B. C. Collins; February, 1914.

Henry C. Fulda, 683 Bushwick Ave.; P. & S., N. Y., 1908; proposed by C. D. Kevin; seconded by Membership Committee; February, 1914.

Percy Houghton, 195 Leonard St.; Georgetown, 1901; proposed by C. D. Kevin; seconded by Membership Committee; February, 1914.

M. Malcolm Knoller, 246 Schermerhorn St.; L. I. C. H., 1909; proposed by M. B. Gordon; seconded by E. H. Mayne; February, 1914.

Leo A. Lynch, 591 Eastern Parkway; Johns Hopkins, 1903; proposed by C. D. Kevin; seconded by Membership Committee, February, 1914.

Leo A. Parker, 77 New York Ave.; P. & S., N. Y., 1905; proposed by C. D. Kevin; seconded by Membership Committee; February, 1914.

James G. Trimble, 503 Vanderbilt Ave.; Harvard, 1906; proposed by C. D. Kevin; seconded by Membership Committee; February, 1914.

Owen M. Waller, 762 Herkimer St.; Howard Univ., 1903; proposed by C. D. Kevin; seconded by Membership Committee; February, 1914.

Royall H. Willis, 214 Park Pl.; L. I. C. H., 1896; proposed by E. E. Cornwall; seconded by Membership Committee, January, 1914.

Frank E. Wilson, 1242 Bushwick Ave.; Jefferson, 1882; proposed by C. D. Kevin; seconded by Membership Committee; February, 1914.

Charles Wuest, 1025 Bushwick Ave.; P. & S., N. Y., 1887; proposed by C. D. Kevin; seconded by Membership Committee; February, 1914.

Applications for Membership.

Applications for membership were received from the following:

Richard F. Seidensticker, 129 Lafayette Ave.; Yale Medical School, 1911; proposed by Edwin H. Fiske; seconded by Membership Committee.

Murtha P. Blaber, 203 18th St.; Physicians and Surgeons, 1910; proposed by John J. Sheehy; seconded by S. J. McNamara.

Richard S. Pearse, 830 Quincy St.; N. Y. Homeop., 1902; proposed by C. P. Frischbier; seconded by W. A. Sherwood.

Mary E. Potter, 290 DeKalb Ave.; N. Y. Med. Coll., 1899; proposed by J. H. Schall; seconded by F. B. Pierson.

Francis M. Rochford, 113 Quincy St.; L. I. C. H., 1903; proposed by E. H. Bartley; seconded by Membership Committee.

Scientific Program.

Symposium on Eugenics.

1. "From the Sociological Standpoint." (Illustrated by lantern slides.)

By A. E. Hamilton, M.A., of the Carnegie Institution, Cold Spring Harbor.

2. "From the Standpoint of Defective Mentality."

By Max G. Schlapp, M.D., of Manhattan. Owing to the absence of Dr. Fernald, Dr. Max G. Schlapp, of Manhattan, was called up to present the subject of "Eugenics from the Standpoint of Defective Mentality."

3. "Viewpoint of the State of New York."

By Robert W. Hebbard, M.A., Secretary of State Board of Charities. Ex-Commissioner of Public Charities of New York City.

General Discussion by Rev. John L. Belford, of Brooklyn; Robert L. Dickinson, M.D., of Brooklyn, and Benjamin M. Briggs, of Brooklyn.

Miscellaneous Business.

Dr. Sylvester J. McNamara, Chairman of the Legislative Committee then read the following report:

The State Legislature has adjourned, and that seems to be the most commendable act of its entire session.

As a legislative body—indifferent to the honest needs of the community, inclined to promote every nefarious scheme, and particularly eager to let down every educational barrier that a generation of the best minds of the State had just about succeeded in erecting to safeguard the public—it is a long time since we have seen its equal.

Owing to the rapidity with which bills were introduced and "railroaded" to and through committees of the different branches of the Legislature, it was impossible for this Committee to have accurate knowledge of the contents, merits or demerits, of many of the bills, and we are indebted to Dr. Neff, Chairman of the Legislative Committee of the State Society, for much information of value.

Before passing to the consideration of other matters, the suggestion is made that some policy should be adopted, and means provided, whereby the Legislative Committee could be furnished with some tangible knowledge of the bills in which we have an interest, and of their advancement to and from the various committees. This formerly had been the custom, but, in some unthoughtful economic mood, the custom was destroyed for the purpose of, seemingly, saving \$100, but with the real result of depriving us of quick information from Albany, and thus making us, by our enforced inactivity, ineffectual opponents of those men and measures which the public good requires that we should watch and combat.

If your Committee is to do efficient work, the basis of that work (which is accurate information relative to the bills to be supported or opposed), should be placed at the disposal of the Committee, or otherwise we can be but poor factors in lending aid to the Legislative Committee of the State Society. It is unfortunate that the medical profession should be called upon to do so much of the safeguarding of the public from incompetent and unscrupulous practitioners, as well as fighting for proper health bills, but that seems to be our lot, and we have no more right to run away from the trouble and expense occasioned in one instance than we would have in the other.

Four bills were introduced that were especially injurious, and they may be designated as:

1. Naturopathic;
2. Chiropractic;
3. Osteopathic; and
4. Christian Science.

The two former failed of passage, and the Osteopathic and Christian Science bills are reported to have been passed after a maudlin session in which many members later claimed to have voted on the side opposite to that upon which they were recorded.

The Governor gave a public hearing on these bills, and the number present was so large that the hearing had to be held in the Assembly Chamber; and let it be known to the credit of the President of our County Society, and to our credit, that the call for volunteers

issued by the President, resulted in Kings County having the largest representation present in opposition to these bills.

To Dr. Kevin was assigned the task of assailing the Christian Science bill, and we surely have reason to hope that the Governor will not allow this bill to become a law after the logical and weighty arguments which our President so cleverly advanced.

There is much that might be said, but of what avail, when it cannot alter what is now beyond recall. We should endeavor to be better prepared in the future to kill nefarious bills before their passage is secured, and if we do not take the reasonable and prudent steps necessary to ensure such a result, why then, as the proverb runs, "experience will be to us only as the stern-light of a ship, which illumines only the path which is left behind."

We should ever have in mind this horde of natural fakirs, in their many and various forms, and we should not only be prepared to combat their every effort to so entrench themselves within the law as to give them an unlimited license to play upon and wheedle the foolish rich, and the improvident middle class, but we should prepare ourselves to pay for an educational campaign which, let us hope, might eventually result in such constructive legislation as would protect the public for all time against these assaults upon the health of the State, and against the proper practice of the medical profession.

It was moved and carried that this report be accepted.

The following motion was introduced by Dr. William J. Cruikshank, and unanimously carried:

Motion of William J. Cruikshank, M.D.

Mr. President, as Chairman of your Economic Committee, I desire to make a motion on what seems to me to be an important matter. In the near future the city of New York will be governed under a new charter, which is at present in the process of construction. That charter will, of course, provide measures for the administration of affairs affecting the public health. Our society should do its part in seeing that such measures are based upon an intelligent conception and proper interpretation of modern medicine.

Therefore, I move you, Mr. President, that a committee of five be appointed to act for the society in this matter, to consider the provisions referred to, to determine our policy in regard to them, to represent us at public hearings and the like, and to take such other action as will tend to insure a charter which will best conserve the public health.

The President then read the names of the following gentlemen who, in the interest of the public welfare, had, at their own expense, accompanied him to Albany for the purpose of opposing the bills which proposed to give recognition to pseudo-scientists: Dr. William Francis Campbell, Dr. Joshua M. Van Cott, Dr. J. J. O'Connell, Dr. Elias H. Bartley, Dr. William J. Cruikshank, Dr. L. Grant Baldwin, Dr. J. C. MacEvitt, Dr. J. H. Raymond, Dr. J. G. Williams, Dr. James W. Fleming, Dr. V. A. Robertson, Dr. C. L. Nichols, Dr. Traverse R. Maxfield, Dr. Thurston H. Dexter, Dr. J. Richard Kevin.

Dr. Siegfried Block then moved that a committee be appointed to agitate for the construction of an asylum for the feeble-minded in the County of Kings. Carried.

Meeting adjourned at 10.45 P.M.

BURTON HARRIS, *Secretary*.



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GONORRHEA IN WOMEN; SOME INTERESTING POINTS IN DIAGNOSIS AND TREATMENT.

Illustrated by Lantern Slides.

Charles C. Norris, M.D.,

Philadelphia, Pa.

I INTEND merely to mention one or two facts regarding the history of this type of infection which may not be familiar to all of you, and which are of especial interest.

From a study of the literature it will be seen that gonorrhea was known and prevalent in ancient times, although we had no positive method of recognizing it until the discovery of the gonococcus by Neisser in 1879. In the early part of the sixteenth century, however, arose an era of confusion, when gonorrhea was believed to be a stage of syphilis.

About this time (1767) Hunter, who was then undoubtedly the foremost scientist, the foremost surgeon, and probably the most influential medical man of his age, performed his famous experiment. He inoculated himself with a supposed Neisserian infection from which he later developed syphilis. As a result of his large following, this experiment was the means of delaying the correct conception of this variety of infection for some seventy years.

The next observer whose name stands out prominently in relation to this subject is that of Ricord, through whose efforts the distinction between these two types of infection was made. In 1849 he performed a series of experiments, in one of which he inoculated 200 convicts, all of whom developed gonorrhea, with not a single case of syphilis. It is owing largely to him that the treatment of gonorrhea with mercury and jalap was discontinued.

In 1872 Emil Noeggeroth, a German physician practising in New York, recognized the intraperitoneal complications produced by the gonococcus, and it was largely through his efforts that the gynecologic side of the subject was brought before the medical profession. Some of Noeggeroth's views regarding gonorrhea were erroneous and these portions of his masterly paper were unduly criticised and the far-reaching value of the major portion of his work was more or less temporarily overlooked. He made the statement that 80 per cent. of all men at some time suffered from a Neisserian infection, and that it was practically incurable in both men and women.

In Noeggeroth's time the specific character of gonorrhea was not generally recognized and its etiology was not understood. It was not until seven years later (1879) that Albert Neisser discovered the gonococcus.

After the discovery of this organism further difficulties regarding this condition arose, for many instances were reported where morphologically similar organisms as stained with the ordinary anilin dyes were present in conditions other than gonorrhea. These pseudo-gonococci were the cause of much discussion, and it remained for Bumm to finally settle the identity of the gonococcus by cultural methods.

The gonococcus is a peculiar organism. It is grown on artificial media with difficulty, and only on certain types of media. It requires frequent transplanting in order to effect a strong growth. On the other hand, when the organism is introduced into the genital tract of man or woman, especially the latter, its chief characteristic is its chronicity. The organism stains readily with the ordinary anilin dyes, but these stains do not differentiate it from other so-called pseudo-gonococci. The diplococcus catarrhalis chronica and the meningococcus are practically the only two other organisms which morphologically and tinctorially (Gram's stain) resemble the gonococcus. For practical purposes the Gram's stain will identify the gonococcus.

Cultural methods are of value in certain selected cases, but owing to the difficulties of growing the organism on artificial media are valueless unless performed by a skilled bacteriologist.

The gonococcus is strictly parasitic to man, even the higher animals being immune to this type of infection. Undoubtedly a so-called gonotoxin may be produced which may kill the lower animals.

As a rule, gonorrhea in its initial stage is an unmixed infection; later, however, a mixed infection is often present.

As to the frequency of this disease Keyes, of New York, states that 50 per cent. of the adult male suffer from gonorrhea. Weiss believes that 80 per cent. are infected. Cabot, of Boston, in a very careful analysis of cases, came to the conclusion that at least 35 per cent. of all men at some time suffered from this disease. As a moderate estimate we may say that 30 or 40 per cent. of adult males have been infected. Neisser has declared that, with the exception of measles, it is the most frequent infection. It is five times more frequent in men than in women, but is more chronic in the latter. Keyes asserts that 75 per cent. of cases of urethritis in men will be cured in one year with no treatment, and that he has never known of a case to exist for three years without reinfection having occurred. It has been estimated that from 25 to 35 per cent. of all sterility is the result of gonorrhea, and that about 20 per cent. of all the persons totally blind from infancy now in institutions in this country owe their affliction to gonorrheal ophthalmia. Probably 50 per cent. of all cases of pelvic inflammatory diseases and 14 per cent. of all puerperal infections are the result of this type of infection.

In making the diagnosis clinical evidences of gonorrhea are worth as much if not more than all the laboratory tests combined. It is a very common thing to have a patient sent to us with an inflammation of the genital tract and to be told by her physician that the case is not one of gonorrhea because smears have failed to show gonococci.

Gonorrhea is by far the most frequent inflammation producing chronic lesions in the genital tract of women, and the fact that a single examination has failed to demonstrate gonococci is no criterion whatever that this type of infection is not present. In the acute stages the clinical signs are almost unmistakable and smears will show large numbers of typical organisms. Unfortunately during the chronic stage

when the clinical signs are less pronounced the bacteriologic demonstration of the organism is often difficult.

A common mistake in examining the secretion in the female is to take it from the vagina, which is full of organisms of all sorts. The three points from which secretion should be obtained for examination are: the cervix, the urethra, and Bartholin's gland. Gonococci are more likely to be present if the secretion be obtained just after the cessation of a menstrual period or as the lochia is beginning to diminish after the emptying of a pregnant uterus. If difficulty is encountered in demonstrating the organism in a suspicious case, slight traumatism to the points from which the secretion is to be obtained and the taking of the smears twenty-four hours later will sometimes result in more organisms being present in the discharge and thus facilitate their demonstration. A similar result may be obtained by a chemical irritation, such as the application of a strong solution of silver nitrate and the examination of the increased secretion thus produced.

Another method of diagnosis is the complement fixation test. Schwartz and McNeil, of New York, were among the first in this country to study a large series of cases. Gardner and Clowes, of Boston, not long ago reported a large series of cases in which they secured excellent results by this method. Like all laboratory tests it has definite and distinct limitations. It would appear that in children the test is less reliable than in adults. We do not yet know exactly how early the positive phase commences. The test is analogous to the Wassermann test of syphilis. The best results are obtained by using cultures from a number of strains of organisms. We do not know exactly how long the positive phase test continues, but it would appear that this test is going to be of distinct value in doubtful cases.

There are two other methods of diagnosis, both by vaccines. One is the vaccination as practiced by Irons, of Chicago, the technic of which is somewhat similar to that of the von Pirquet test. The other method is to inject the vaccine intramurally. In chronic cases if gonorrhea is present an exacerbation follows. Fonstein has recently reported 192 cases in which the intramural method was employed with excellent results. I need not say these tests are of no value unless performed by an experienced bacteriologist.

There is no necessity to describe the symptoms of gonorrhea in the lower genital tract except to point out that the disease in women during its incipency is mild. A cervicitis produces practically no other symptom beyond a leukorrhea, more or less purulent and profuse. Urethritis, as a rule, does not produce any symptoms except a transient frequency and a slight burning, which soon disappears. The infection of Bartholin's gland, unless an abscess or cyst occurs, results in but little discomfort.

As desiccation kills the gonococcus and exposure to room temperature tends to quickly inhibit it, the infection in adults is nearly always the result of sexual intercourse. From the lower genital tract the disease may spread by continuity to the corporal endometrium and from thence to the adnexa and pelvic peritoneum. This extension from the cervical mucosa to the body of the uterus is most likely to occur at a menstrual period, after the emptying of a pregnant uterus, or as a result of ill-advised intra-uterine manipulations. This statement is well proved by the fact that little girls, in whom gonorrheal vaginitis is comparatively frequent, do not very often develop intra-peritoneal complication. Patients in whom the disease is limited to areas below the internal should, therefore, be safeguarded as much as

possible at the menstrual periods and following childbirth and miscarriage.

A word of warning might well be sounded concerning indiscriminate intra-uterine applications as often applied in office treatment in an endeavor to cure supposed cases of corporial endometritis. Not infrequently these patients are the possessors of a cervicitis only, and the treatments are themselves the cause of an upward spread of the infection. Corporial endometritis itself, without involvement of one or both tubes, is comparatively infrequent. If, under such circumstances a salpingitis is overlooked, intra-uterine manipulations are prone to produce a severe exacerbation and result in a sharp attack of pelvic peritonitis.

The treatment of gonorrhea of the lower genital tract is difficult for many reasons—the chronicity of the disease, the fact that painful symptoms are likely to be absent and therefore the difficulty of getting the patient to continue treatment until entirely cured, and also that these women are frequently being reinfected. It is absolutely impossible to cure a woman who is cohabiting with a husband who is the possessor of chronic gonorrhea.

Douches of various gonoroicides are usually employed in the treatment of these cases. These are well enough for cleaning purposes, but it should always be borne in mind that the infection is continued not by the surface organisms which are easily destroyed, but by the gonococci in the depths of the mucosa and which are unaffected by the douche. An important factor in the local treatment is a careful preliminary cleaning of the affected area, the object being to remove the mucus and other secretions which prevent the gonococci from reaching the depths of the glands. Dobell's solution is an excellent application for this purpose. This should be followed by silver nitrate, tincture of iodine, or other germicide. The treatment recommended by Dr. Norman Geis, which consists of a thorough application of a solution of picric acid, has given excellent results.

So long as the disease is confined to the lower genital tract it does not incapacitate or cause the patient much suffering. When, however, it spreads to the peritoneum we have a very serious condition. This extension is most apt to occur at the menstrual period and after emptying of the pregnant uterus. Statistics show that perhaps not more than one in four or five cases of gonorrhea in the lower genital tract eventually spreads to the pelvic peritoneum. As the result of the inflammation following this extension, infectious material is poured out from the tubes over the ovaries, producing retention cysts and actual infection of these organs; the uterus itself becomes adherent and large tubal abscesses and less frequently abscesses of the ovaries occur. As a result well-defined symptoms of pelvic peritonitis appear.

It is very common for a woman to be infected during the first few months of married life. If she becomes pregnant and goes to term the child may be born with an ophthalmia, and during the puerperium, or sometimes shortly after, an attack of pelvic peritonitis occurs and sterility ensues, resulting in the well-known "one-child sterility." The heritage of most of these patients is dysmenorrhea, sterility, more or less invalidism interspersed with attacks of acute pelvic peritonitis. Rarely is pelvic peritonitis of gonococcal origin fatal. The sheet anchors of treatment during the acute attacks are rest, preferably in the Fowler position, the application of heat or cold to the lower abdomen and frequent copious vaginal douches,

and regulation of the diet and bowels. At this time pelvic examination should be infrequent and performed with extreme gentleness. Many cases will require operation and this should be performed during the interval. I cannot emphasize this point too much. Formerly operation was often performed during the acute attack. Far better results can be obtained by palliative treatment during the acute stages, and if necessary operation during the chronic stage. Such a course is accompanied by a lessened mortality, a lessened morbidity, and better after-results. During the acute attack the patient should be in a well equipped hospital and under the care of a surgeon.

A word or two regarding the protection of the innocent and the question of prophylaxis. This is a much mooted point and I do not propose to consider it in detail. It is my opinion that a health certificate should be required from every man contemplating marriage. I do not think that any of us who have sisters or daughters would want them to marry a tuberculosis person, and certainly we would not want them to marry a man with a Neisserian infection. Therefore, if we accept this position the next step should be to enforce it.

I am an earnest advocate of educational methods as a means of reducing the prevalence of venereal diseases. A procedure which is of value along these lines is the distribution of pamphlets to male patients in genito-urinary dispensaries. These should make clear the necessity for continuing treatment until cured. It is well known that when the subjective symptoms disappear the patients, as a rule, discontinue treatment. These pamphlets also serve to educate the patients regarding the dangers of the disease both to themselves and to others. In Norway every patient before receiving treatment for a venereal disease must sign a paper to the effect that he knows the contagiousness of his disease and that he is aware of the law which makes him liable for fine or imprisonment if he spreads it or even exposes others to infection. Patients must continue treatment until a reputable physician countersigns his paper.

Dr. Norris in closing the discussion said: I think I have taken up enough of your time to-night and have very little further to say.

Dr. Ward mentioned the question of the treatment of these cases by opening a tubal abscess through the posterior cul-de-sac. I think we undoubtedly all see cases which we drain through the cul-de-sac. It is a comparatively simple operation, but is not always curative. To cure the condition we must often remove the remains of the pathologic process. I might say that in the majority of cases we do not operate on gonorrhea *per se*, but on the "derelicts of the gonococcal storm," as Sanger has aptly phrased it.

(For discussion see page 229.)

ENTERIC FEEDING: ITS PRACTICABILITY AND INDICATIONS.*

James Taft Pilcher, M.D.,

Brooklyn, N. Y.

IT has always been a most pertinent problem for both the physician and surgeon to put a diseased organ at rest as completely as possible. This pertains to the stomach as well as any other portion of the body, and the more perfectly this can be accomplished, the more rapid and definite will be the results derived from any treat-

* Read before the Kings County Medical Society, Brooklyn, N. Y., February 17, 1914.

ment. Hitherto this has been impossible as far as the stomach was concerned owing to the fact that nutrition must be afforded the body, and food, no matter how bland and nonirritating, introduced into the organ must necessarily call upon its motor and secretory powers to digest and properly propel it.

A few years ago Einhorn devised an ingenious tube which, when administered by mouth, passed through the stomach and out into the duodenum and small intestine for a varying length, but far enough to prevent regurgitation of fluids into the stomach and thus made it possible to completely rest this organ and still carry on the function of alimentation in a very practical way. This method of treatment has been in use for some years in our clinic, it having been adapted from those who originally devised it. The apparatus itself is easy of introduction and we have found that it has been well tolerated *in situ* for two or three weeks, even by the most nervous patients without any practical discomfort. Of primary consideration and an absolute contraindication for its use is a stenosis of the pylorus which will not allow the end of the tube to pass into the duodenum. Therefore, it is necessary to ascertain absolutely before beginning this treatment that the pylorus is patent. This may be done either through the aid of radiography, or by a preliminary introduction of a duodenal bucket on a string. Instances having been called to the speaker's attention of cases in whom a tube had been introduced without having taken these precautions, and after two weeks treatment eventually found to have been still in the stomach. To determine when the end of the tube has reached the small intestine three practically pathognomonic tests are at one's disposal:

1. If milk be taken by mouth into the stomach and an attempt made to withdraw it by syringe through the tube and none is obtained, it is a fair presumption that the end of the tube is not in the stomach.

2. If milk be introduced through the tube and after a few minutes' interval attempts be made with the syringe to withdraw it and the original quantity is not recovered, it indicates that the tube has passed beyond the pylorus, and owing to the fact that liquids introduced into the duodenum pass out of it immediately, one is unable to recover the injected material.

3. Injection of the tube with a bismuth emulsion and taking a radiograph of the abdomen.

If one has satisfied himself that the tube is in the duodenum, we have found it practicable to readily introduce daily, food representing at least 3,000 calories and have been able for periods of two or three weeks at a time to preserve nutrition perfectly in this way. To accomplish this result we have found egg and milk, lactose and proprietary foods which can be administered in the form of an emulsion, and other liquid substances to be of the most value. The meals which are administered every two hours for eight feedings may consist, for instance, of a glass of milk to which one egg and some lactose have been added. This should be introduced at body temperature and very slowly. Care must be taken at the end of each feeding to introduce a syringe full of water in order to clear the tube of any substance which might subsequently become coagulated and block its end. Should too rapid introduction by the syringe be attempted the patient immediately complains of epigastric distress, a feeling of bloating and marked prostration, sweating, rapid shallow breathing, increased pulse and even syncope. Each feeding should take, when administered by the

syringe, about 25 minutes. A great deal of the tedium of this form of alimantation has been obviated by the author by the employment of a special apparatus so that the feeding may be administered under the same principles as those governing the administration of the Murphy drip by the rectum, between 150 and 175 drops being allowed to flow into the duodenum each minute. This has proved most satisfactory to both the patient and the nurse. During such treatment the patient need not necessarily be confined to bed, although in the beginning it is desirable. The technical difficulties which may arise necessitate the attendance in the beginning of a nurse and should be undertaken only in an institution where emergencies may be properly dealt with. It is necessary to give the patients their usual quota of water and this is introduced between the feedings in quantities of eight ounces at a time.

It has been found desirable in many instances to wash out the stomach from time to time to rid it of the ordinary secretions and detritus which may have gathered there. This has been practised repeatedly, introducing an ordinary stomach tube alongside of the duodenal tube without disturbing the latter in any way. Local medication of the stomach may thus be practised, and the administration by mouth of alkalies, bismuth or tonic astringents without the admixture of fluid or stomach secretion is thus made possible.

While the speaker does not wish to be understood as advising this form of treatment in cases of intractable ulcer of the stomach in whom the usual ambulatory measures of dietetic and medicinal regulation have proved ineffectual in relieving the symptoms, still there are many instances where there is no stenosis present and who seem so absolutely opposed to operative interference, that it would appear reasonable to offer them this method with the hope that possibly healing might occur that would not otherwise take place if the ordinary dietetic measures were persevered in. Certainly many such cases have been completely, immediately and seemingly permanently relieved of their discomfort, pain, burning, belching and vomiting. The frequent occurrence of severe cases of hyperemesis gravidarum offers also an indication for enteric feeding and many trying experiences of this type can thus be tided over the critical period and many children saved who would otherwise most certainly have been sacrificed.

Lavage of the small intestine is indicated in many instances, such as in conditions of catarrhal enteritis or toxic albuminuria and those frequent occurrences of fermentation and putrefaction of material in the small intestine. This may be accomplished very simply and positively by introducing saline solutions or other fluids through this tube directly into the part affected. We have found that the best results are obtained in these cases from using a litre at a time continuously administered by the drop method.

Again, in cases of amebic dysentery where the stomach has proven incapable of retaining the ipecac administered, it may be given through the tube directly into the intestine, as, indeed, may any drug with most satisfactory results, the intestine seeming to be practically insensitive except to mechanical or thermal factors, as in injecting material too rapidly or of introducing it too hot or too cold.

Lately this avenue of administering curative agents has been utilized for the insufflation of nascent oxygen, slowly, in quantities up to two or four litres at a time and thus exerting a deleterious influence over excessive bacterial flora by inhibiting their growth, and indirectly

but positively diminishing the so-called "fermentative dyspepsia" which they cause.

The results of cirrhosis of the liver are very rapidly and markedly influenced by enteric feeding owing to the consequent reduction in the volume of the venous flow to the portal system occasioned by the inactivity of the stomach. It would seem, however, that this improvement must only be temporary, although positive, and that a resumption of the previous condition might be anticipated as soon as the stomach was put into use again. In the earlier cases, however, its effect might be more lasting.

Of particular interest to the speaker is a class of cases which the general practitioner is having most frequently thrust back upon him usually with the recommendation that lavage and abdominal support be employed, both exerting probably a temporary psychic effect, but both of which in the end prove unavailing in many of the cases. They are those of atonic or dilated stomachs which have no organic obstruction as an etiologic factor, and again those instances of neurosis with epigastric distress and intermittent vomiting, considered at times possibly under the term *migrain*, accompanied frequently with extraordinary gas formation and belching, whether through actual gastric fermentation, or acquired by process of aerophagia is immaterial.

The results of enteric feeding in many of the most intractable of these patients, particularly those of the last group, is remarkable. Since previous to the treatment even the smallest amount of food ingested caused the most astonishing discomfort. While subsequent to the removal of the tube they have been able to take the greatest variety of foods without any discomfort whatever, a condition which has persisted in many of them. Occasionally a second treatment, or even a third, after an interval of several months is advisable and readily accepted by the patient who appreciates the benefits which are to be subsequently derived.

In the cases of atony and dilatation the influence of complete rest of the stomach which is thus afforded certainly does allow the organ to regain its tone in a large measure, and unquestionably gives one immediately results which cannot be obtained in many months by the use of the popular abdominal belt.

Doctor Pilcher at the conclusion of the above paper showed by lantern slides the type of tube used, the method of feeding by use of injection through syringe, the improved method of enteric feeding by use of the especially constructed drip apparatus, and closed his remarks by showing a series of reproductions of radiographs on lantern slides illustrating the position of the patient's stomach before treatment and the amount of residue present in each after six hours, and radiographs of the same patients after treatment, first showing the tube in position, injected with bismuth, showing absolutely the fact that it had passed through the stomach and was situated in the small intestine and then the position of the stomach was shown after the administration of the barium meal of the same quality and quantity as that administered before treatment was instituted, and drew attention to the difference in the position of the stomachs and their increased peristaltic activity after having employed the methods indicated in his paper.

(For discussion see page 232.)

THE MORE COMMON SPEECH DEFECTS FOR THE GENERAL PRACTITIONER.

Siegfried Block, A.M., M.D.,

of Brooklyn, N. Y.

THE general practitioner, the school teacher, the parent and the public in general have more concern about the individual with a defect in his speech than with almost any other type of trouble, either mental or physical, because in many cases a healthy, alert mind is handicapped, and ordinary means of making good are blocked to the individual, who, in turn, either becomes alien to his equals, neurasthenic, freakish, abnormal, or possibly criminal. The difficulty with which these people absorb an education is almost unbelievable.

For the sake of clearness and briefness, only a few of those cases will be taken up which have presented themselves in the author's private classes. It goes without saying that the obtaining of employment and the holding of a position seems almost impossible in a large number of cases. Among the most common defects may be mentioned, absolutely no speech at all, dumbness, then various degrees and types of the aphasias, and finally stuttering and stammering. I shall leave the teaching of dumb people to talk for another occasion. Suffice it to say that lip reading and imitation thereof, is a thousand times to be preferred to the old methods of fingers.

For the sake of simplicity we ought to consider stuttering and stammering as the same thing. Many distinctions are made, but on careful consideration of all the differentiations it is easier to call them one. When we think of a chorea, a tic, a habit-spasm, or even a hysteroid condition of the enunciation, we cover at least ninety per cent of our cases of stuttering. Alike in these conditions one of the main methods of curing the defect is by properly conducted instruction, not by a teacher alone, but by a physician who is well up in pedagogical methods. In so many cases the difficulty is to avoid a return of the condition.

In treating these cases I have found the best results, both as to speed of improvement and permanency of results, nothing to equal small private classes. Breathing and muscle exercises with groups are of infinitely more value than single work. Such exercises as singing are only done under embarrassment by individuals without voices, and as so many of these cases are acquired by imitation, cures can be affected this way with much facility.

It would not be amiss, perhaps, to mention here a case of a family, father sixty, one son (married) twenty-nine, and one son twenty-six years old, respectively. When the family physician who sent the case told me that these people have tried all sorts of treatment, it seemed peculiar that never did they all take a course together—the cure was only temporary for one boy, and the other boy never improved.

Another case, a brother of a physician, was sent to me for a diagnosis. I called it a habit-spasm, acquired probably from imitation. This gentleman went to another city on several occasions to be cured, and although he talked quite well for a time, he always has a return of his trouble.

It is wise to be on the look out for cerebral irritation in these

cases. Faulty innervation must be guarded against. And the ordinary irritations and impediments of speech so commonly found by nose and throat specialists must be removed. After all these are taken care of we *still* have a *doctor's* case and not a teacher's on our hands. The diagnosis of hysteria must be eliminated. It is surprising how many anesthetic palates, anesthetic areas, and exaggerated reflexes and contracted visual fields are found in these cases. We all know how much of this condition has been brought on by copying others who have had a mild case and the patient has, by practice, multiplied the original symptoms in his own case. I have seen many such cases in children, but adults "get the habit" also. The family I cited were all adults of average intelligence. A young lady from the West, an understudy of an actress, who had to play the part of a stammerer on the stage, soon acquired the "habit" from practice, lest she might not be able to take the principal's place when necessary.

The number of curable cases are almost unbelievable if care and time be given them, with proper understanding of the condition.

The anatomical defects of cleft palate and hair-lip with their characteristics, I believe are more surgical than the general practitioner would care to handle. But even after the surgeon has operated, the speech will suffer unless properly re-educated.

APHASIAS.

This subject is so large and so much is of interest in its connection that only a very cursory mention of the most important points will be made. In general, we all know that the word means no speech. In general, also, we all know that in Broca's convolution, on the right side for left-handed persons, and on the left side for right-handed persons, is the main governing speech center. If we realize for a few minutes that speech is only a method of expressing feelings, desires, necessities, love, hate, and a thousand other interpretations of the person using it, we cannot help appreciating the many associating fibres of the cerebral hemispheres connected with this center. When the power to utter a large enough number of sounds is gone, speech takes place by writing, or at times signs (pantomime). Thus it is simple to realize that hearing, seeing, muscular actions, memory, feeling, smelling, in fact all the senses have to do with speech. In addition to these memory muscular centers, and the centers of apperception and conception are indirectly concerned with words stating facts either new or repeated from past experiences.

Each one of the sense centers has really a center for receiving impressions and a place for storing up a memory of the particular stimulus. By causing these memory centers to act and then communicating to the centers of reception, quite vivid impressions of facts may be constructed. These are mental images, causing so many psychic phenomena. These centers are all in the cortex and the fibres connecting them are subcortical. Defects are accordingly when of the centers cortical aphasia, and when of the association fibres subcortical aphasia. Subcortical aphasias are the more common. Anything causing a lesion temporarily or permanently in any part of the brain, may cause trouble in these places under consideration, for example, hemorrhages, gummata, tubercles, aneurysms, embolism, trauma, arteriosclerosis, brain-syphilis, abscess, tumors, etc.

Briefly it may be stated when a center of the right side is destroyed the other side can often be invoked to assist in causing the defect practically to disappear by a system of education. Some of the results thus accomplished are well nigh marvellous. But even such instruction should be under the supervision of a medical man versed in the best methods of diagnosis and treatment.

The centers easiest to discuss at the present time are as follows: Visual center (plain sight)—cuneus, V in the diagram; visual-memory for words is in the angular gyrus, VM in the diagram; auditory-word memory is in the first temporal convolution, AM in the diagram; muscles of speech center is in the foot of the ascending

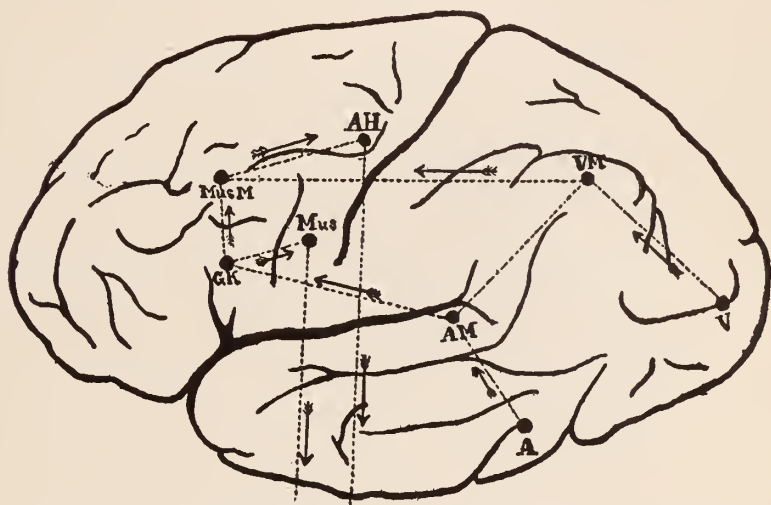


DIAGRAM SHOWING NERVE IMPULSES IN SPEECH AND WRITING WITH MODIFICATIONS (ORIGINAL) PARTLY AFTER DANA, BASTIAN & STARR.

frontal, Mus in the diagram; arm and hand centers in the center of ascending frontal convolution, AH in the diagram; memory for muscular movements about second frontal convolution, Mus M in the diagram; glosso-kinesthetic center posterior part third frontal convolution and Island of Reil, GK in the diagram; auditory center (simple hearing), first and second temporal convolution (Lichtenheim), A in the diagram.

When one or more of the sensory centers are affected we have sensory aphasia—as affection of the visual center is a sensory aphasia. Motor aphasia is an affection of the motor part of the speech centers. These are more common than the sensory type.

In a very cursory fashion we can understand the ordinary types of aphasia spoken of by referring to the diagram. Please do not forget that most of the types met in practice are subcortical, that is, in the association fibres connecting one center with another.

Cortical Auditory Aphasia.—There is a loss of power to understand either spoken words or words which are asked to be written from dictation. It is quite evident that words cannot be repeated after the examiner. Practically this patient is deaf, although the ear itself may be intact. The lesion is at A in the diagram. The

center, AM, may still be intact and the person may have memory of sounds heard at another time, but may not hear the sounds now given out at the test. Paraphasia may at times result from such a condition. In attempting to speak he may use wrong words because he himself cannot hear (mentally) what he says.

A number of writers make a point, and it is more or less generally accepted to-day, that a cerebral, or silent speech, exists. Bastian, according to Dana, calls it the glosso-kinesthetic center. In the diagram it is marked GK. At this center (internal language or psychomotor center) immediately after we recollect the sounds in the auditory memory center (AM in the diagram), left first temporal convolution, the memory of all the sensory impressions are aroused, as in the case of a bell, which we can study in the next diagram. It is this inter-communication in the cerebrum which is called internal language, and the center for this is in the left third frontal convolution and Island of Reil (GK in the diagram).

Subcortical Auditory Aphasia.—Lesions in the association tracts between the cortical centers for hearing and for hearing memories (A—AM in the diagram). The centers may be intact. The patient can hear—A is intact. The patient has memories for words, but cannot connect his hearing with what he has stored up in his memory center for words at AM. Therefore, he cannot write from dictation. He cannot understand words spoken to him and he cannot repeat words after the examiner. He may be able to copy or to read.

Cortical Visual Aphasia.—A lesion at the center for vision at V. These patients cannot read, they cannot write what they wish. Even silent reading is impossible. Such a defect is called Alexia. They may have all the other cerebral functions, but such a condition is rare alone.

Subcortical Visual Aphasia.—The lesion is in the tracts from the center for visual word memories to the sight center in the cuneus. This patient can remember how to write, but he does not see what he writes. He cannot read, and know what he is reading. He can copy mechanically.

Cortical Motor Aphasia is rare. There must in this case be a lesion in the cortex at GK in the posterior part of the third frontal, the foot of the ascending frontal, the Island of Reil and also the foot of the third temporal convolution. The patient cannot repeat words read out loud, and he is unable to use the "silent language" which Dana and Bastian have so carefully worked out. Therefore, silent reading and writing are lost.

Subcortical Motor Aphasia.—This is the purest form of aphasia, and is by far the most common form. The lesion is in the tracts leading to centers from which the fibres go down the pyramidal tracts of the cord. (In this diagram in the tracts to Mus.) The patient can understand. He knows what to say but cannot use his muscles properly to say it. The muscles are in good condition but the connection with them from the other centers are out of order. The patient knows he does not say what he wishes to say. These people can think all right and silent speech is left intact.

I wish to present this patient to you. You will see he can make every sound that the average man can make. He is not a stutterer, although he was sent to me as such. His nose and throat have been declared O. K. He understands everything that is said

to him. He tries to talk, but is not able to say the right words at present. Moreover, he knows that he does not talk right; each time he tries to say a word something else is said from what he wishes. He writes as he talks. His lesion is in the tract GK—Mus. I have asked this boy to write me his whole family and personal history which I shall read you exactly as I received it this evening:

"Both parents was born in Brooklyn. They was married in year about 1885. The first son was born on Sept. 26, 1887. He was name George. The second son was born on Jan. 25, 1889. He was same like me about his talk. But he able to talk good when he was about seven year old. He fall off back of an 'Ice Wagon' one day and he hurt his leg which he was operate for. The third son was born on Mar. 9, 1892. The only sickness he have was scarlet fever. The fourth son which was I was born on Sept. 11, 1896. I couldn't talk good since I was born. My father always thought that I was going to deaf and dumb. But Grandma alway told him that I could hear and unstand everyone. When I was about six year old I have the measle. My sister was born on Sept. 15, 1898. The only sickness she have was the measle—the same I have them. My mother died Apr. 25, 1905. Then we our Grandmother about 5 year. My father got married again. He began to take up house shortly afterward. He only took my sister and with him. I couldn't get along with my stepmother. So sent to the Brooklyn Disciplinary Training School. I was there for two year. Then my stepmother got me out the home. I was living with them for a few months and I couldn't get along with her then I left her and I live with my Grandmother since then. My father died when I was in the home."

This boy is clever enough to go through grammar school, and support himself, despite his handicap, showing that he is, at least, of average intelligence.

The centers for arm and hand movements I included for the sake of completeness, in the ascending frontal convolution. (AH in my diagram.) Lesions here prevent writing what one wants to write, although the patient may think all right.

Many cases of combined sensory and motor aphasia exist.

It is foolish to try to make aphasia a very simple matter. For example, take the word stool. To a physician it suggests a bowel movement. To the pupil in grammar school it means a chair. To the police and the criminal it may mean a stool-pigeon. To still further analyze this point a surgeon may first think of pain, or operation, the general practitioner of a cathartic, the district attorney may think of a helping hand, and look with favor at this term, while the criminal may hate the sound. Thus, on still more complete analysis various centers may be aroused, and when one is asked to repeat this word by these association tracts, it is possible that by silent language communication is had with the sense of smell, perhaps the centers for pain, or maybe sight, etc. A delicate, fastidious miss, may even silently communicate with herself that she better get sick at her stomach. The stationer may have his business centers stimulated, and this one single word may suggest toilet-paper sale. It is not intended to put forth an argument showing how a large number of different persons may come to conclusions very different from each other; but to show how a single stimulation of the cerebral center by a single word can set

the whole brain ageing, communicating and inter-communicating with other centers before a word is uttered.

Even after all this is decided upon, mentally, the muscular centers must be stimulated, and proper co-ordination set up so that the sounds are properly emitted. This is only some scattering idea of what is comprised in the term aphasia.

Many of the results of treatment in these cases are due to the lack of *total* destruction of the centers. They are only partly destroyed and then, in addition with the other side's help, it is quite easy to realize how results are obtained. One of the essentials to be remembered is that the patient must be taught all over again, starting in with simple monosyllables, as pa and ma, etc. If a diagnosis is established which center is affected, that particular faculty must be restimulated. The writer has tried to have left-handed persons use the other hand, and vice versa in right-handed patients. Very much as patients are taught to use muscles to replace paralyzed or atrophied ones, so with proper *medical guidance only* can the best possible improvement be achieved in this class of cases.

In conclusion, the writer wishes to emphasize that only the most important speech centers have been discussed. When we think that writing with a pencil in the mouth, making the movements with the toes, or even copying words with motions of the tongue are possible, can the intricacy of the whole problem be imagined.

After operations for gross anatomical corrections, as cleft palate, hair-lip, diseases of the tongue, teeth and thyroid, etc., these methods ought to be followed before the patient is finally discharged and he should always be given the benefit of such classes as described, then singing, breathing, etc., all lose their nonsensical element.

SOCIAL WELFARE WORK AND THE DISPENSARY.—AN ILLUSTRATIVE INSTANCE.*

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THE sociological side of the practice of medicine is being brought more to the front lately. We are learning that there is more to dispensary and hospital work than the mere writing of prescriptions and the advising of certain directions to be carried out. It is all very well and good to prescribe a tonic for an undersized, badly-nourished boy to be taken three times a day after meals; but, of how much benefit will this tonic be if the meals are not forthcoming?

Any dispensary or city hospital which numbers among the majority of its patients the poorer class is performing but half its work if it has not a social welfare committee connected or associated with it.

I am reporting this group of cases not because of anything unusual or peculiar in the diagnosis or treatment but as an object lesson of the benefits that can be derived by the patients from this association of dispensary and social welfare work.

* Read before the Brooklyn Pediatric Society, April 22, 1914.

Three children, aged eleven, nine and six, were referred by a local minister to the Brooklyn Association for Improving the Condition of the Poor because of a general family mental deficiency. They were brought to the Polhemus Memorial Clinic by the field secretary of the association, and the following history obtained:

The mother was 43, had married at 29; both her father and mother had died of pulmonary tuberculosis. In addition to having borne these three children, she had had four miscarriages, one prior to the birth of the eldest, and the rest since then. She was slow of thought, was not certain of her answers; she knew how old she was at the time we questioned her, and that she had been married at twenty-nine years of age, but she could not say how long she had been married.

The father of the children was 58, this being his second marriage. His first wife was never pregnant. At the time of his second marriage he was 45. He did not know what his parents had died of.

All three children were full term at birth, normal deliveries, but generally backward in teething and walking, this being most marked in the eldest. They had all been troubled with enduresis since birth.

Peter, the eldest, was poorly nourished but fairly well developed. He was sleepy in appearance, his teeth were in bad condition, but did not show any Hutchinson borders; he had a high arched palate. He was slow in answering questions and not very efficient in simple arithmetical problems. He was in a special class at school.

The other two children were superior to him in intellect, but still left much to be desired.

The family mental deficiency present here impelled me to try the luetin test. On June 10, 1913, a luetin was done on all three children. A papule was present in each case in two days. On June 16, 1913, I did a control test with normal saline. In two days the site of the control was negative in all three, while the luetin test still showed a papule. The positive luetin caused us to investigate the family history.

The findings were communicated to the association, who, after investigation, notified us that the father had been in a hospital for general arterio-sclerosis, that he confessed to venereal infection in his youth and that a positive Wassermann had been obtained from his blood. Through the aid of the association I had the father call to see me and found him to be a mental deficient. He was ill-kept, slovenly dressed, his perception of past events was bad, he could not remember in which hospital he had been nor for what condition. He did not know how long he had been home. He was working at his old occupation as a boatman. His wages were brought to his wife, who was enabled, under the guidance of the field secretary of the association, to live more beneficially than formerly.

The missing link having been found to the positive luetin in the children, we felt justified in placing them on mixed treatment, giving them potassium iodide gr. ii, bichloride of mercury gr. 1/96, increasing the bichloride later to gr. 1/50 three times a day. The luetin test persisted for seven months.

When I last saw the children, Peter, the eldest, had made a remarkable improvement. Since the association took charge of the commissary department he had lost his badly nourished appearance to some degree. He could read well for his age, could distinguish English from German, could answer questions intelligently and he

informed us that he had been promoted from the special class for delinquents to 5B. The other two were progressing normally.

The condition of the father, however, had become worse and it was finally decided to place him in a hospital for the insane as he was suffering from paresis and depressive melancholia.

The family is still under the care of the association.

NUTRITIONAL DISTURBANCES OF INFANCY: THEIR MANAGEMENT.*

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THE rational therapy of the various forms of malnutrition cannot adequately be presented without a brief consideration of their classification and nomenclature. This is the more needful as the conceptions in this field of pediatrics have undergone many and important changes in the last two decades. At the time when it was the custom to draw upon pathology for the pathogenesis of most morbid conditions, the classification of Widerhofer was generally adopted. These affections were divided into functional, catarrhal, and inflammatory; and the terms fermental diarrhea, gastric and enteric catarrh, gastritis, and gastro-enteritis came into general use.

During the bacteriological era which followed, repeated attempts were made to establish a bacterial origin for nearly all these affections. They were attributed to contamination of the food with bacteria either outside of the body or within the gastrointestinal tract. But while this is undoubtedly true in some cases, in the great majority we must look for other causes. At autopsy lesions in the gastro-intestinal tract are found in only a small number of cases. We are consequently justified in the assumption that the disturbance is most often a functional one.

Many clinical and chemical studies, more especially by Czerny, Finkelstein and their schools, have shown that in the gastro-intestinal affections of infancy, in contradistinction to those of the adult, important changes in the general metabolism occur. They are not merely local, but general affections.

This led to a radical change in the whole nomenclature. Terms emphasizing the local condition had to be abandoned. The entire subject assumed a wholly different aspect on the introduction of the term nutritional disturbance by Czerny. Less attention was paid to bacterial contamination of the food and more to the metabolic changes induced by the constituent elements of the food. The effect on nutrition of each of these, alone or in combination, was carefully studied. It was seen that qualitative and quantitative changes in the food were capable of producing definitely injurious effects on the nutrition of the body. The notion of food injury became established.

To make this conception clear Finkelstein drew attention to the subject of food tolerance. It is the pivotal point of his classification. Food in its usual form consists of substances which are foreign to the body. They must be further elaborated by the

* Read before the Williamsburg Medical Society, March 9, 1914.

gastro-intestinal apparatus and its accessory organs before they can become an integral part of the body. This process of assimilation demands the expenditure of energy which varies greatly for each article of diet. When greater demands are made on the assimilatory functions than they are capable of performing exhaustion takes place; and in its wake a series of more or less pronounced disturbances follow. Not alone is there no adequate assimilation, but the unassimilated components of the food become actively injurious agents.

The assimilatory capacity and consequently the tolerance for food show marked congenital variations in different individuals. As a rule neuropathic infants and those suffering from the so-called exudative diathesis possess, at least during infancy, a reduced tolerance of food. Moreover, the tolerance of any particular infant is not constantly the same. As a result of infection, starvation, and abnormally low or high temperature, the tolerance is temporarily lowered. To maintain the physiologic activities of the various metabolic functions of the body the food must be perfectly adapted to its assimilatory capacity or tolerance. The normal tolerance of an individual may be passed by giving a superabundance of food, or a normal amount of food may be given to an individual whose tolerance is permanently or temporarily below normal. In either case injury results; its degree being dependent on the degree of disproportion between the burden and the capacity of the body for taking care of it.

As a result of these modern conceptions two classifications have come into vogue. We may consider these disturbances from the etiologic point of view, and so with Czerny and Keller speak of nutritional disturbances as due to alimentation, infection, or constitution. But though this classification is theoretically of very great importance, it is not well adapted to clinical use. The symptoms of the various affections are practically identical no matter what the etiology is.

And so this classification has been largely replaced, at least in Germany, by that of Finkelstein. His is both a functional and a symptomatic classification. It is, however, primarily based on the degree of tolerance.

When the tolerance has not reached a high degree of reduction the local symptoms are most in evidence. Either there is chronic constipation with so-called soap stools or more or less acute disturbance with diarrheal stools. More pronounced reduction in tolerance leads either to the chronic state of decomposition (so-called infantile atrophy) or to the acute state of alimentary intoxication. We thus have four states, or rather stages, of nutritional disturbance, viz.:

Weight disturbance, dyspepsia, decomposition, and alimentary intoxication.

The most common of these is the chronic condition of *Bilanzstörung* or *weight disturbance*. It is characterized chiefly by lack of gain in weight. Though there is no real loss of weight these babies, with the advance of time, are usually far below the weight normal for their age. The stools may be normal in appearance, but usually they possess the character of so-called soap stools. They are very dry, greyish-white and foul. They leave no stain on the napkin and closely resemble putty. Their dryness is due to the fact that in them neutral fat is largely replaced by fatty soaps which do not absorb water. The light color is not due to lack of bile but to a reduction of the

biliverdin into colorless urobilinogen. Other symptoms pointing to abnormal nutrition are pallor of the skin, flabbiness and weakness of the muscles, distended abdomen, restlessness, especially at night, and occasional rise of temperature.

In most cases this condition is due to overfeeding with milk. It is the fat in the milk that is not well borne. Formerly it was attributed to casein indigestion, owing to the presence of curds in the stools. But it has been satisfactorily shown that the soft curds consist of fatty soaps and not casein. The offending element is not casein but fat.

The chief indication, namely, the reduction of fat, is in the milder cases best met by diminishing the total quantity of milk ingested. This can usually be accomplished either by increasing the feeding intervals or diminishing the quantity at each feeding.

This mode of treatment is rarely successful in cases of marked severity or long duration. A greater reduction is required and this cannot be accomplished by merely reducing the quantity of milk. We must dilute the milk more and compensate for the loss of caloric value by increasing the carbohydrates. The choice of the carbohydrate is not a matter of indifference. They vary greatly as regards fermentability and capacity for being assimilated. Clinical and experimental studies have established the surprising fact that milk sugar, though a normal constituent of breast milk, is the least assimilable and most fermentable of the carbohydrates ordinarily employed in infant feeding. Arranged according to the assimilability (from lower to higher) the carbohydrates read as follows: Milk sugar, cane or beet sugar, plain flour, dextrinized flour and the various dextri-maltose preparations. What is ordinarily called maltose is in reality a variable mixture of dextrose and maltose. On account of its high cost pure maltose is practically never used in the feeding of infants.

In some cases we can successfully overcome the form of faulty nutrition we are now discussing by the use of barley or oatmeal water as a diluent. If this measure fails we add two to five per cent. of a good wheat flour. We must, however, be very cautious in the use of flour for infants below three months of age. Clinical experience has shown that, as a rule, only very small quantities of flour can be properly assimilated at this age.

It is a remarkable fact, first observed by Czerny and Keller, that very frequently the combined use of two carbohydrates such as flour and cane sugar or flour and dextri-maltose will immediately cause a gain in weight where either alone had previously completely failed. A satisfactory explanation for this phenomenon has not yet been offered, but the clinical fact is nevertheless firmly established.

In cases of long standing it is wise to begin at once with the most effective measures, namely, Loefflund's malt soup or buttermilk. You are all familiar with the former preparation which of late has come into general and somewhat too free use. It is not a proper food for normal infants, nor is it a panacea for all the nutritional disturbances of infants. There must be definite indications for its use. Moreover, we must be quite certain of the degree of tolerance for carbohydrates, as it is a food very rich in this element. Its careless employment may lead to serious intoxication and collapse. Given in proper doses in conditions where the indications for its use are present the results obtained at times verge on the marvelous. The gain begins almost at once and is often as high as a pound, or a pound and a half a week. It must, however, not be forgotten that the gain at first merely repre-

sents the retention of water. A slight disturbance may permit the outflow of most of this water and consequently rapid and alarming loss of weight ensue.

Malt soup is prepared as follows:

50 grams ($1\frac{1}{2}$ ounces) of wheat flour of the best grade is added to one-third liter (quart) of milk, well mixed and strained through a fine sieve.

In another dish we put 100 grams (3 ounces) of Loefflund's malt soup extract with potassium carbonate, and two-thirds liter (quart) of water; we combine the two, cook slowly in double boiler for half hour, then bring to a boil.

On this food the infant usually has three to five bulky, semi-fluid, slightly acid, golden yellow stools a day. Malt soup may be given even before three months of age. But great caution must be used in the dosage of the flour and malt extract. It is best at this age to begin with only one ounce of the malt extract and one-half ounce of flour. Needless to say the usual precautions as to cleanliness and preservation in a sterile condition must be observed as with other milk mixtures.

Wander, of Bern, has recently introduced a preparation known as maltosan which combines the flour and malt extract in powder form. 125 grams (4 ounces) of maltosan are added to a mixture containing $\frac{1}{3}$ of a quart of milk and two-thirds of a quart of water. This is then boiled and given as malt soup.

Malt soup contains the fat of milk diluted one-third. And in some cases the tolerance of fat is so reduced that even this small quantity is not well borne. In these cases we resort to a milk product still poorer in fat, namely, buttermilk. It suffers from the disadvantage that great difficulty is encountered in obtaining a sufficiently pure product. Being acid in reaction we cannot avail ourselves of the acidity as a criterion of its undecomposed state; we must, therefore, obtain it from a reliable dairy. As buttermilk contains almost no fat and but very little sugar the caloric deficiency is made up by the addition of carbohydrate. Here again we combine two carbohydrates in the form of five grams (1 drachm) of flour and 50 grams (10 drachms) of cane sugar to the quart. The buttermilk to which the flour has been added is first boiled and the sugar then added.

In very young infants with weight disturbance it is generally not wise to experiment with the various mixtures given above. We begin at once with breast feeding, which is the best food under all circumstances. While the general condition improves at once under the natural food the gain in weight is usually very slow. This is due to the low contents of salts in human milk. But it is best to persist, for it is not alone a question of nutrition but also of infection. The immunity conferred by breast milk most surely obviates the danger from infection. However, if there is no gain after several weeks it is desirable to substitute one malt soup or buttermilk feeding for a breast feeding. We accomplish more in this way than by changing the wet nurse. At the end of a few weeks another artificial feeding is substituted, etc., until the feeding is entirely artificial.

Dyspepsia (in its restricted sense) is a more advanced stage of nutritional disturbance. Though it may occur as a primary condition, it is most often grafted on a weight disturbance or a parenteric infection. There is usually a history of previous mild attacks of digestive disturbance. It represents a further reduction in the toler-

ance for food. Recent studies by Finkelstein and his pupils have thrown considerable light on the factors concerned in the production of diarrhea. Primarily this condition is due to fermentation of the carbohydrates of the food. This action is aided by the mineral salts of the whey. Secondly the fats are split up into fatty acids which stimulate peristalsis and intestinal secretion.

In the treatment of dyspepsia one prime indication must be fulfilled, namely, reduction of the carbohydrates and fats. I shall not attempt to describe the ordinary treatment of dyspepsia with barley water, skimmed milk, etc. It is familiar to you all and possesses the advantages that it is convenient, inexpensive, and readily carried out at home. In mild cases very satisfactory results can be obtained. This, however, is not the case in the more severe types. To keep the diarrhea in check it is often necessary to use barley water or other cereal water for a considerable time. It not infrequently happens that the first addition of milk leads to a recurrence of the diarrhea which had previously been checked. Barley water contains such minimal amounts of nutriment that it means practically food starvation. As a result of its use for any considerable period the tolerance for food is so markedly lowered that subsequently even small quantities of milk cannot be taken without intestinal disturbance.

The great desideratum has been to find a mixture which, while antagonistic to the local disturbance, should at the same time contain sufficient nourishment to sustain the body during its recovery from the food injury. Thanks to the genius of Finkelstein and Meyer this deficiency in our therapeutic armamentarium has been supplied. Based on purely theoretic considerations an article of diet has been produced which meets the therapeutic indications in this type of disturbance. These investigators fortunately determined the fact that the casein of milk is a direct antagonist to intestinal fermentation of the carbohydrates and fats. Overcoming many technical difficulties they finally succeeded in producing a combination known as Eiweissmilch or protein-milk, which contains very little milk sugar, a small quantity of fat and mineral salts and a considerable amount of casein. Despite the removal of the fat the caloric and nutritional value of protein-milk (with the 3% Nährzucker which is now regularly added) is but slightly less than that of breast or cow's milk.

It is prepared as follows: A teaspoonful of Simon's essence of rennet is added to a quart of milk and allowed to stand in a water bath at 42°C for ½ hour. The curd is then put in a cheese-cloth bag and the whey allowed to drain off slowly without exerting pressure. This process usually takes about an hour. The curd is then scraped through a fine sieve with a wooden mallet or spoon, half a quart of water being used for repeatedly washing it. ½ quart of the best buttermilk obtainable is then added and the whole mixture boiled for a short time. It is essential, in order to obtain a finely divided curd, to beat the mixture vigorously with an egg-beater. The desired amount of sugar, which is usually 3% Nährzucker at first, is dissolved in a little hot water and added while the food is being boiled. If it is to be shipped or kept for any length of time it must be sterilized in a steam sterilizer. The food cannot be used unless the curd is in a fine state of sub-division. On shaking it should look like ordinary milk and should readily pass through an ordinary nipple. It has not a very pleasant taste, but it can be made sufficiently palatable by the addition of saccharine.

It requires considerable care and practice to make this food properly. The technic of its preparation is somewhat too difficult for the ordinary person who takes care of a baby. Fortunately in this city a well prepared protein-milk can be obtained from the Walker-Gordon laboratory. Recently a concentrated protein-milk has come into use in the Finkelstein Clinic. It possesses certain advantages in feeding cases of inanition. No water is used in its preparation, the curd being washed with $\frac{1}{2}$ quart of buttermilk. For ordinary purposes this concentrated protein-milk is diluted with an equal amount of boiled water.

In moderately severe cases of dyspepsia no food is to be given for from six to twelve hours. Fluids are supplied in the form of a weak straw-colored tea. Boiled water may be used instead. But, as a rule, there is an insurmountable prejudice on the part of the mother and relatives against the use of plain water due to the fear of starving the baby. This objection is not encountered when tea is given. The tea, however, must not be sweetened with sugar, but when desirable with $\frac{1}{2}$ tablet of saccharine to the cup.

If the case is seen early it may be advisable to remove any fermentable food that may still be present in the gastro-intestinal tract by means of a laxative such as castor oil and an enema. Gastric lavage is useful for obstinate vomiting. Usually when a case is first seen by the medical attendant there is nothing to be gained by the administration of laxatives. At the Finkelstein Clinic I have practically never seen them exhibited.

After the brief tea period the administration of undiluted protein-milk is begun. In most cases it is quite safe to give 300 grams (10 oz.) in the first 24 hours. This is increased daily at the rate of 3-5 oz. a day, until $\frac{1}{5}$ of the body weight is given. No undue emphasis should be paid to the condition of the stool. But as a rule within three or four days soap stools develop, greyish-white, hard, and resembling putty. This is the characteristic stool of weight disturbance but is not pathological while protein-milk is being given. Having reached $\frac{1}{5}$ of the body weight we wait for the entire cessation of the diarrhea and then increase the carbohydrates to 5, and when necessary to 7 or more per cent. Occasionally we achieve a more rapid gain during the later stages of convalescence by the addition of 1% of flour.

In chronic cases of dyspepsia it is rarely advisable to institute a hunger period on account of the danger of still further lowering the tolerance by inanition. We merely reduce the percentage of carbohydrates to 2 or 3%, and substitute the more assimilable dextri-maltose for the milk sugar. If these measures fail to check the dyspepsia we resort to breast-milk or protein-milk.

Those who have mastered the minute details of the method of administration of protein-milk are in practical accord in placing this preparation next to breast milk as the most efficient measure in the treatment of dyspeptic disturbances of infancy. But the difficulty encountered in the preparation of a reliable product has led to the introduction of a number of substitutes. In principle they are all based on the antagonistic action of casein on carbohydrate fermentation, which some authorities attribute to its high content of calcium.

In moderate cases, Aschenheim advises the addition of 15-20 c.c. (4-5 drachms) of a 10% solution of calcium lactate to each bottle of the feeding. Feer in his Zurich Clinic uses with apparent success a

mixture of cream, milk and Nährzucker to which he adds a synthetic albumin preparation known as plasmon.

Stoeltzner advises the use of laroson, which is a calcium caseinate containing $2\frac{1}{2}\%$ calcium oxide. It is a white, tasteless, neutral powder which is readily soluble in hot milk. 20 grams (4 drachms) of laroson are added to $\frac{1}{2}$ of a quart of fresh cold milk. In the meantime 10 ounces of milk are brought to a boil, the two portions are then mixed together and boiled for five to ten minutes. The mixture is then strained through a fine sieve. Before using it is diluted with an equal amount of plain or cereal water. Sugar is added slowly up to 5%.

More recently Engel has devised a method of preparing milk which apparently conforms to the notions we now entertain of a food that should act antagonistically to carbohydrate fermentation.

A quart of milk is boiled, then cooled to 42° C. Two rennet tablets specially prepared by Engel are dissolved in a teaspoonful of lukewarm water, then added to the milk and thoroughly mixed. The milk is then allowed to stand for one half hour at room temperature. It is then heated again to 42° C. so as to favor the formation of the curd. A quart of boiled water is then added and thoroughly mixed. At the end of one-half hour, when the curd is completely settled, a quart of the supernatant fluid is then poured off. In this way we dilute the whey $\frac{1}{2}$ and effect a reduction in the milk sugar and mineral salts. The calcium is relatively increased.

Of all the substitutes for protein-milk the two last mentioned are apparently the most promising. In a considerable number of cases which I recently had the opportunity of watching at the Finkelstein Clinic the Engel protein-milk yielded apparently good results. The addition of carbohydrates is the same as in the Finkelstein's-Meyer mixture.

While the stage of weight disturbance is chiefly characterized by cessation of gain in weight, actual loss of weight is the striking feature of the state of *decomposition*, or infantile atrophy as it is commonly known. The local symptoms are over-shadowed by the general ones. The temperature is usually sub-normal and the pulse, as a rule, weak and slow. In addition to disturbed absorption and assimilation there is actual destruction of tissue. The stools possess no constant or characteristic features. A high grade of intolerance for food is the leading feature of this condition producing the so-called paradoxical reaction. Not alone is there no gain on increasing the amount of food but actual loss of weight. Though this condition is a very grave one, the fatal issue is directly due to the supervention of an infection such as furunculosis, paravertebral pneumonia, or alimentary intoxication.

For many years it was attributed to atrophy of the mucosa of the gastro-intestinal tract. But it has been abundantly proven that the apparent atrophy in reality represents but a post-mortem change. The absorption of food is delayed by the formation of fatty acids in the intestines. The body protects itself against these acids first by throwing out its reserve mineral deposits and later by giving up some of its mineral salts from the less vital organs. With the demineralization of the body is associated a considerable loss of water.

It is of the greatest therapeutic importance to recognize the fact that a decomposition may temporarily masquerade under the guise of an apparently harmless weight disturbance or dyspepsia. It can readily be imagined what fatal consequences may follow such a diagnostic error. We can best guard against this by considering not alone

the present status but also the previous history of the case, for decomposition is a chronic state of malnutrition in which temporary remissions may take place.

In the management of decomposition we must avoid both inanition and overfeeding. The former so tends to reduce the tolerance that recovery is impossible, the latter exposes the patient to the danger of intoxication. Of the two inanition is the more to be dreaded. In the pronounced cases the aggravation of the disturbance cannot be checked under the use of the ordinary milk mixtures unless so little nourishment is given that life cannot be sustained. In these cases we are practically limited to the use of either breast milk or protein-milk.

Breast milk, though the ideal food for a normal infant, is not an ideal curative agent in nutritional disturbances. Nevertheless it is the best we possess. It is not perfectly adapted for these cases because it is rich in carbohydrates and fats, those constituents of the milk which the decomposed organism finds it specially difficult to cope with. If the infant is put to the breast, it may take such quantities of milk as is likely to lead to serious intoxication. To avoid this danger we give at first only expressed milk in quantities of 200-300 grams (6 to 10 oz.) per day. This is increased at the rate of 100 grams (3 oz.) every other day until about $\frac{1}{7}$ of the body weight is taken per day. An abundance of water is given in the form of tea sweetened with saccharine. On account of the high fat and carbohydrates of human milk an initial exacerbation is likely to take place. There may be some further loss of weight, depression of the general condition and sub-normal temperature. But soon the curative powers of the whey assert themselves, and the general condition improves. For a considerable period, however, the gain may be minimal, due to the low proteids and salts in breast milk. The body apparently first restores its normal chemical composition, and not until then does gain in weight occur. In the later stages repair may be accelerated by the addition of one feeding of malt soup or buttermilk enriched by carbohydrates. The return to the ordinary milk mixtures must be very gradual.

When circumstances prevent resort to breast milk the only means of combating the more severe cases of decomposition with any hope of success lies in the use of protein-milk. It enables us to give sufficient quantities of food at an early stage of the treatment without running the danger of increasing the abnormal fermentation in the intestines. A six hour period of exclusive use of tea is desirable on beginning the treatment. During the subsequent 24 hours 200-300 grams (8-10 oz.) of undiluted protein-milk is given at intervals of 2-3 hours, and in addition an abundance of tea sweetened with saccharine. Every other day the food is increased by 100 grams (3 oz.) until $\frac{1}{5}$ of the body weight is given. From the first 3% of Nährzucker is added to the protein-milk. As soon as the quantity has reached the maximum amount of one-fifth of the body weight we begin to increase the carbohydrates, first to five per cent., then by 7 and more. At times carbohydrate inanition, indicated by sub-normal temperature and languor, becomes marked before the maximum quantity has been reached. Under these circumstances we may increase the carbohydrates and then the quantity, but as a rule the former method of administration is safer and more likely to lead to an uninterrupted convalescence.

Alimentary intoxication, one of the most serious of the nutritional disturbances of infant life, rarely occurs as a primary condition. Most

commonly it follows in the wake of a decomposition or severe general infection. It may, however, also appear in the course of severe dyspepsia. Its existence points to a marked alteration in the functions of nutrition. The recognition of its non-bacterial nature we owe to Finkelstein. Up to the time that his classical work appeared it was the common belief that this condition was due to decomposition of the food by bacteria or their growth in the intestinal canal. As there are no inflammatory lesions in the intestines, if the condition is bacterial in origin, it must be due to the absorption of bacterial toxins. But thus far no one has been able to demonstrate unequivocally their presence in the intestinal contents. Neither have bacterial toxins been found in decomposed milk. The experience in children's hospitals speaks strongly against the etiologic influence of decomposed milk in these cases. Under the same milk supply one or more babies will develop intoxication while the great majority of the others remain free from disturbance. Moreover, the clinical picture closely resembles diabetic and uremic coma, purely metabolic disturbances.

The prodromal symptoms are slight elevation of temperature, diarrheal stools, and some loss of weight. The beginning of the actual intoxication is manifested by apathy and somnolence. When fully developed nine cardinal symptoms are usually present: fever, collapse, disturbed sensorium, peculiar deep respirations, diarrhea, albuminuria with casts, alimentary glycosuria, leucocytosis and great loss of weight. The practiced eye will usually detect at a glance the earliest beginning of an intoxication.

All the factors concerned in the production of an alimentary intoxication are not yet known. An important part is played by carbohydrate fermentation aided by the mineral salts of the whey. Perhaps the fermentation of the carbohydrates aids the absorption of the salts. There probably develops an acid intoxication and a marked loss of water from the tissues. This produces disturbance of all the processes of oxidation.

To remove the cause of intoxication absolute food starvation is indispensable. But this should never be continued for more than 24 hours. In the meantime water should be plentifully supplied in the form of weak tea. It has been variously proposed to add sodium chloride to the water or to give bouillon with salt or carrot soup, so as to favor the retention of water. This procedure does not have the sanction of Finkelstein, who believes that it is likely to delay the removal of poisonous substances from the body.

The ideal food must contain but small quantities of carbohydrates and salts. But we cannot go beyond a certain permissible minimum. For the carbohydrates this varies between 2½-3%. Less than this leads to carbohydrate inanition, with consequent loss of ability on the part of the diseased tissues to retain water. This percentage of carbohydrates, however, may lead, in the more severe cases of intoxication, to increased fermentation unless it is counteracted by other factors. Casein has this action, and this explains our ability to give such considerable quantities of carbohydrates in protein-milk.

Whether we give breast or protein-milk we must begin with very small quantities, 2½ to 5 c.c. (1 dram) in the first 24 hours, making up the loss of water by tea in severe cases. Rectal instillation of warm water at the rate of 30 drops per minute by means of a small size catheter is very useful. Recently Hess has described an appar-

atus similar to the Murphy drip which automatically delivers fluids orally in drop doses. It should prove useful in these cases.

The food is increased every other day by 50 or 100 grams and the feeding intervals gradually increased. The carbohydrate per cent. is not increased until the total quantity of food has reached one-seventh (breast milk) or $1/5$ (protein-milk) of the body weight. In favorable cases there is critical detoxication during the first few days. The temperature comes down, the diarrhea improves and there is cessation of further loss of weight. But convalescence may be very slow or interrupted by a relapse. If the toxic condition persists we are largely guided in the further treatment by the weight. If it has come to a standstill we proceed to increase the quantity of food until $1/10$ (breast-milk) or $1/7$ (protein-milk) of the body weight is given, and then wait until complete disappearance of all toxic symptoms. If the loss of weight continues the danger from inanition is a grave one, and we must increase the food as in cases where the toxicity disappears critically. A relapse at an early stage of the treatment is of serious omen as it indicates a great reduction in tolerance. We can hardly hope to save these cases except by breast milk. When the relapse occurs at the later stage it is usually due to the food having been increased too rapidly. Temporary reduction and subsequent very slow increase is indicated.





EDITORIAL



"MEDIAEVAL ETHICS."

THE *New York Times* under date of May 15 comments with some bitterness upon the action of The Association of American Physicians in "refusing to let Dr. Plotz tell its members about his discovery of the typhus germ because the facts of his success had already appeared in this paper." In the issue of May 14 *The Times* devoted a full column of its first page to a circumstantial account of Dr. Plotz, his personality, education, attainments, and his researches into the bacteriology of typhus fever. The item expressly stated that the information did not come from Dr. Plotz and was published without his knowledge. Commenting on the action of the Association in refusing to permit the doctor to present the results of his studies before it, *The Times* continues as follows:

It is hard, and especially hard for a paper which, like *The Times*, has persistently and constantly upheld scientific medicine and its representatives against all their enemies, to speak with moderation of the course followed by the assembled doctors. Their conduct illustrated just that spirit in the medical profession, and just that part of what is called medical ethics, which explain the turning of so many people, nowadays, from the regular to the irregular practitioners—which in a way and to a degree justify that turning.

The article in *The Times* was in every way proper and legitimate. It contained no trace of sensationalism or exaggeration. It conveyed to the public, including doctors all over the country, information which both had every right to have. It expressed, as to the importance of Dr. Plotz's work, only the opinions of named experts, competent to judge it. There was no possibility of harm to anybody in consequence. And yet the Association of American Physicians chooses to consider its precious dignity affronted, and apparently the organization intends to do what it can to suppress a discovery described on high authority as epochmaking, and to punish the discoverer, merely because this paper, not he, ignored a rule the utility of which long since passed away!

To the displeasure of these small and narrow-minded persons *The Times* is, of course, indifferent. It will, in the future as in the past, print such medical news as it chooses, when it chooses. That, incidentally, some annoyance and humiliation, both quite undeserved, have been brought on a promising young investigator, *The Times* regrets, but he can well afford to smile at a petty persecution, sure to be futile in the end.

The stand taken by *The Times* is not an unnatural one and if it represents the whole truth of the situation, is one in which the JOURNAL is disposed to concur, but having in mind the unfortunate publicity attendant on the Friedmann episode and its unhappy ending, if it is ended, the JOURNAL feels that such wholesale condemnation of medical ethics is unfair. It has not infrequently happened in the past that momentous discoveries in medicine have been announced which subsequent investigation has disproved. Most physicians recall the enthusiasm attendant upon the positive announcement of Sanarelli's discovery of the germ of yellow fever which the subsequent investigations of Walter Reed and his confrères disproved; and many other instances are available illustrating the unwisdom of positive an-

nouncements of medical discoveries until time and the scrutiny of well-equipped investigators have confirmed them. It is true that the announcement of Dr. Plotz's investigation was dignified and made without sensationalism and it is greatly to be hoped that subsequent investigation will substantiate his studies. If the action of the Association was purely the result of prejudice excited by premature announcement of the doctor's work in the lay press one need not hesitate to characterize that action as unwise and inconsiderate, for the article would have been quoted and commented upon publicly immediately upon its announcement and would have received the same publicity only a day later. If, on the other hand, the Association have reason to believe that Dr. Plotz lacked adequate proof of the correctness of his observations, its action was justified.

The code of ethics is essentially the outgrowth of centuries of experience and is based primarily upon the knowledge that the lay mind is not trained to appreciate what is of real value and what is only specious in medical practice, and incidently many physicians lack a refined judgment in distinguishing the real from the apparent. The JOURNAL has maintained that real advances in medical science should be placed as widely as possible before the public, but insists that such announcements should only be made after due trial has proved their worth. The restrictions of the code of ethics should never be applied arbitrarily, but judiciously and temperately; were they to be entirely removed the news columns would be flooded with statements of individual opinion—illogical, unwarranted, the expression of callow, myopic, selfish minds. The fundamental purpose of the code of ethics is to protect the ignorant and credulous from charlatans and to foster high altruistic ideals within the profession, and is not to impose arbitrary barriers for the protection of mysteries from the vulgar. With the disappearance of ignorance, when every citizen shall be able to judge accurately for himself, when selfishness and prejudice shall have disappeared from the earth, then, and not until then, will it be safe to do away with all restrictions, whether in medicine, law or government.

H. G. W.

FALSE AND MISLEADING ADVERTISING.

On April 14, 1914, the following ordinance went into effect:

1. Any person, firm, corporation or association, who, with intent to sell or in anywise dispose of merchandise, securities, service or anything offered, directly or indirectly, by such person, firm, corporation, or association to the public for sale or distribution, or with intent to increase the consumption thereof, or induce the public in any manner to enter into any obligation relating thereto, or to acquire the title thereto, or any interest therein, makes, publishes, disseminates, circulates or places before the public, or causes directly or indirectly to be made, published, disseminated, circulated or placed before the public in this city in any newspaper or other publication sold or offered for sale upon any public street, sidewalk or other public place, or on any sign upon any street, sidewalk or public ground, or in any hand bill or advertisement posted upon any street, sidewalk or public ground, or on any placard, advertisement or hand bill exhibited or carried in any street or public ground, or upon any sidewalk, or on any banner or sign flying across the street or from any house, an advertisement of any sort regarding merchandise, securities, service or anything so offered to the public, which advertisement contains assertion, representation or statement which is untrue, deceptive or misleading, shall be fined not less than twenty-five (\$25) dollars nor

more than two hundred and fifty (\$250) dollars, or by imprisonment of not less than five days nor more than six months, or by both such fine and imprisonment.

This is practically identical with an ordinance that has been in force in Chicago for some time past, the prime object of which is the control of advertising by charlatans, especially such as deal with gonorrhoea and syphilis. The inconspicuous clause relating to service is the really important feature of the ordinance which is comprehensive enough to include practically all the means which the ordinary advertising quack employs. The penalty is somewhat more rigorous than that prescribed in Chicago. Dr. Barringer, in discussing this subject at a recent meeting of the Medical Society of the County of Kings, pointed out the effectiveness of the Chicago ordinance and stated that it never has been legally tested because of the extreme unwillingness of both advertiser and newspaper to have this particular sort of trade aired in public. It is earnestly to be hoped that the effects of this restriction may be all that can be asked. It at least places in the hands of the public authorities a powerful weapon if wielded intelligently, and we believe that the present Health Department is fully alive to the importance of the added power which this ordinance supplies.

H. G. W.

WHAT WILL YOU DO?

THE resolutions introduced by Dr. Cruikshank at the last meeting of The Kings County Medical Society, which will be found elsewhere in the present number of the JOURNAL, are worthy of careful consideration. There seems to be a very general feeling that the action of the last State Legislature in passing the two Bills on osteopathy and christian science must not pass unnoticed by the medical profession and that it is time for concerted action by the entire profession of the State to present effective opposition to a possible repetition next year. This is a public duty that is incumbent upon the medical profession as guardians of the public's health, who will rightly hold us accountable if through neglect or slothfulness on our part we permit smallpox, cholera or other epidemic diseases to gain a foothold. Preventive medicine means prevention by foresight, by intelligent restrictions and by education, as well as by drugs and other treatment. Now is the time to demonstrate our fitness to meet our responsibility.

H. G. W.





Society Transactions



TRANSACTIONS OF THE MEDICAL SOCIETY OF THE COUNTY OF KINGS.

Regular Meeting, March 17, 1914.

The President, DR. J. RICHARD KEVIN, in the Chair.

Paper: "Some Interesting Points in the Diagnosis and Treatment of
Gonorrhœa in Women." (Illustrated by Lantern Slides.)

*By Charles C. Norris, M.D., of the University of Pennsylvania, Philadelphia, Pa.
(See page 201.)*

DR. GEORGE GRAY WARD, JR., of Manhattan, in opening the discussion said:—"Gonorrhœa, we all realize, is a more serious disease in women than in men, largely due to the differences in the anatomical arrangement of the organs. The sexual organs in the woman being intraperitoneal largely, while in the man, of course, they are extraperitoneal. The results, therefore, are much more serious in women because the disease involves a cavity which is prone to infection with what may be very serious sequelæ. The after-results of gonorrhœa in women, as we all know, are the real serious aspects of the disease—sterility, ectopic gestation, and even carcinoma, as pointed out by Dr. Norris, and the chronic invalidism that these patients go through life with, unless relieved by a radical operation, which practically unsexes them in the majority of instances.

"Gonorrhœa in women, in relation to its seriousness, divides itself into two divisions, according to whether the disease is above or below the cervix, which we may speak of as the danger zone. If it is below the cervix, the disease is mild in character, so far as the woman knows, though, of course, very chronic; but if it is above the danger zone, why, then, she is apt to suffer the serious results which have been referred to. She may be ignorant of its existence if it is below the danger zone, and very frequently is. Therefore, it should be our object when a case presents itself with this disease to ascertain at once which division the case belongs to, and if the cervix is not involved it behooves us to try and limit the disease below that zone to prevent the destruction of the more vital organs.

"The diagnosis of these cases is easy, of course, in the acute stages, but difficult if in the subacute or chronic condition. Our only means of diagnosis in these later stages is by using thoroughness and great care.

"The method of obtaining the discharges from the urethra and Skene's glands and Bartholin's glands and the cervix is important. The technic, I mean, is important. I think many cases are negative in the report from the laboratory because care and a correct method in obtaining the discharge has not been properly carried out. It is a common practice to take a cotton swab which has been sterilized and wipe the cervix or urethra with this swab and make a slide preparation from it. We may get negative results by this method, when if more care were taken in obtaining the discharge, for instance with a pipette or capillary tube after thorough expression of the glands of Bartholin or Skene's glands and the urethra, and also the cervix, so as to squeeze out the discharge from the deeper layers, more accurate results from the laboratory will follow. It has been proven by Van Giesen, I think, who made a series of tests with the pipette and the capillary tube, that that is a more positive method of getting the gonococcus than with the cotton swab.

"Dr. Norris states an important fact in his book, that the secretion from Bartholin's glands on expression being perfectly clear is no positive sign that gonococci are not present. Very many are apt to think as they squeeze the gland and get the secretion from its depths that it being perfectly clear like egg albumen means there is no infection there, and unless it is turbid or purulent, give it a clean bill of health. Dr. Norris states that that isn't so. I understand he has found gonococci present in apparently clear fluid from the glands.

"In the treatment of this disease there is a considerable danger in the use of the douche nozzle if the case should be one which has not involved the danger zone, in my opinion. In the case of a woman having a vulvitis and urethritis and you give her a prescription for a douche, she may carry the infection upward with the nozzle to the region of the cervix. I think, therefore, it is important to avoid the douche nozzle unless you are sure that the cervix is involved. In my hands silver nitrate has given the most satisfactory results. I use a 6 per cent solution, which is stronger than the text-books advise, and I pour it liberally over the external genitalia, and then if the vagina and cervix are involved, through a speculum I fill the vagina with the same solution—6 per cent (30 grains to the ounce), except possibly in those cases of very pronounced blondes, as in some of the Scandinavian types where the skin and mucosa being less resistant, 20 grains to the ounce, or a 5 per cent solution, would be perhaps less irritating. I have used in these cases picric acid in the form of picric acid and silver, picritol, which is a preparation put up in the form of suppositories, which the patient can herself insert and use in the upper vagina in addition to the office treatment.

"One point which I think it wise to emphasize is the great danger of any interference with the cavity of the uterus in the acute stages. That would seem almost unnecessary, yet it is a common experience to be called in to see a case in consultation which has just been curetted by the doctor, on account of the patient having a discharge, with the idea of curetting out the infection.

"A great advance, I think, has been made in recent years when it was advocated that acute disease of the appendages should be let alone until the inflammation has subsided. I believe it was Simpson who first urged that where we have an acute pelvic condition, not to operate until the acuteness has subsided to such a time as the blood count is negative and the temperature is normal for a considerable period. Urethritis is the most difficult phase of the disease to positively eradicate, it seems to me. In women you can remove the uterus and you can remove the tubes and ovaries, and even remove the vagina if necessary, and also Bartholin's glands, but we cannot remove the urethra and consequently that is the site where we must entirely rely upon local medication.

"The technic of the treatment of urethritis is, I think, of great import. We don't wish to carry the infection back into the bladder and yet we wish to distend the urethra if possible with a solution to kill the gonococci. I have used a medicine dropper which I have devised, with a rounded, olive-shaped point, with the openings on the posterior surface of the point so that the solution simply will flow backwards, as it were, toward the external meatus, the caliber of the medicine dropper being such that it cannot be penetrated any further than $2\frac{1}{2}$ to 3 centimeters into the urethra, thus preventing the passage of the medicine dropper too far. When the rubber bulb is compressed the flow will be outward through the external meatus, thus making it possible to gently distend the urethra with the solution.

"A point of importance to bear in mind is that the cardinal symptoms of irritation of the urinary apparatus are practically always the same, no matter what is the cause, that is, frequency of micturition, burning and smarting, and possibly vesical spasm. Whether it be a cystitis or whether it be a urethritis, we have practically always the same symptoms and we must make our diagnosis by examination in those cases by a careful investigation of the discharge from the urethra.

"In the treatment of acute infection of the tubes it is of interest to remember that some years ago Dr. Polk, of New York, advanced the proposition that we should treat acute gonorrhoeal salpingitis as the aurist treats middle ear infection. What would we think of an aurist who allowed an acute suppuration of the middle ear to go on until it destroyed the ossicles of the ear and extended back to the mastoid and possibly to the brain without incising the drum and allowing the pus to escape? If such a case should come to our notice where we had an acute infection of the cervix and that case was under observation and suddenly the tubes developed a tenderness which would make us feel certain they were becoming invaded, would it not be wise to make a posterior vaginal section, to incise the tubes and to institute gauze drainage in the cul-de-sac with the hope of instituting a prophylactic measure to save the tubes? I would like to ask Dr. Norris whether in his study of this subject in women he knows if that procedure has been carried out at any time with satisfaction?

"As to the chronic phases of the disease, the points in the technic are of interest, and in connection with Skene's glands the methods that I have used in recent years is that of using the cautery wire, inserting the wire into the duct of the gland and turning on the heat to destroy the gland. That has

been more satisfactory than attempting to inject the gland with a hypodermic needle with the various silver salt solutions. It is quickly and easily done and it seems to me much more satisfactory.

"As to the treatment of the cervix in the chronic types, when the cervix is deeply involved, there are only two methods whereby we can attempt to cure or eradicate the disease. One is the method advocated by Hunner, destroying the mucous membrane by the actual cautery, and the other is that of amputating the cervix. I speak, of course, of cases where there is a deep involvement of the nabothian glands which refuses to yield to ordinary local treatment. The Hunner method has been very successful in my hands. I use an electro cautery rather than a paquelin cautery. The burns are made from the internal to the external os deep enough to destroy the glands, and only two or three strokes at a sitting.

"Another point which is of interest possibly to the surgeon is in those cases of involvement of the tubes where we may feel that it is wise to conserve a tube. We are all agreed that it is pretty nearly hopeless, it is true, but there are cases arising occasionally where it would seem best if the patient wishes to bear a child. In that case I insert strands of catgut into the lumen of the tube with the idea that these strands of chromic gut may possibly keep that tube patent.

"The main thought which seems to present itself to me tonight on this subject is to impress on the general practitioner especially, the insidiousness of the chronic forms of the disease, and that our only safety is to regard every discharge with suspicion, just as many men are now doing in regard to syphilis. In the Mayo clinic, I think, they take a Wassermann reaction in every case, and, therefore, whenever we encounter a discharge it is best to regard it with suspicion and always take a smear. Like the old dictum in regard to amenorrhœa, that it is strong presumptive evidence of pregnancy unless disproved, so we may say that a persistent discharge from the female genitalia is strong presumptive evidence of gonorrhœa unless disproved."

DR. ROBERT L. DICKINSON, in discussion, said:—"Any one who has read the great book by Dr. Norris feels that there is nothing more to say except 'Amen.'"

"I am a little surprised to get the impression that Dr. Norris, when he stands and speaks, is radical, whereas when he sits and writes, he is conservative. It is the peculiarity of that self-limiting disease, gonorrhœal salpingitis, that it wears itself out. We know that in six to eleven weeks the contents of gonorrhœal tubes is sterile. This wonderful power of repair of the insults to which the pelvic peritoneum has been subjected for millions of generations we can depend on to limit to a small number tubes that have to be removed. Cases needing operation fall into two distinct classes. The well-defined abscess backing into the cul-de-sac is to be drained from below. The woman who is invalided by a mass made up of adherent tubes and uterus, and particularly with a retroverted adherent uterus, all of which has persisted for years, needs to have her pelvis cleaned out—not of ovaries—but of tubes and uterus. Practically, operative cases fall into these categories.

"We who are called in consultation in cases of peritonitis due to tubal disease, have trouble in holding off the general practitioner and telling him that nature can take care of that form of infection—only give her a weary long time and she will be reasonably well. While douches and tampons do some good, the main thing is to make the calendar travel as fast as it may. Great masses of exudate sometimes go as high as the navel and yet when melted out often leave sealed tubes and a partially immobilized uterus and sterility as the only vestiges of extensive invasion.

"I think there is too much operating on tubal disease. When the patient is a chronic invalid because of the mat in her pelvis, then her tubes need to come out and her chronically-infected uterus needs to come out; otherwise the uterus left behind and only the tubes taken, she is liable to be left with dysmenorrhœa, metrorrhagia and leucorrhœa—namely, those discomforts that belong to chronic metritis. Whenever possible (and in most cases it is possible), one or both ovaries are left behind and she is therefore not unsexed. But the solid adhesion operations are the most wearisome in all pelvic surgery.

"Too much emphasis cannot be laid on what Dr. Norris has said about prevention. Prevention, gentlemen, is it coming mainly through us? Have we not kept our mouths shut on this matter too long? This Society has taken a stand for publicity in general. Publicity on sex questions—though the pendulum may swing too far—is bound to come. It is the laity who will demand a certificate that a man is clean before he marries. The timid profession will follow after. The laity will soon ask us to say who are the doctors qualified to write such certificates. The laity will soon demand that semen be certified—like milk.

"The next question is that of sterility. The bane of the gynecologist's life is the woman with sealed tubes. Perhaps you don't surely know that she has sealed tubes, she has had so mild a salpingitis. To decide this big-little question Dr. Cary has proposed a method which promises a great deal, that of throwing argyrol into the tubes and taking an X-ray picture. We are trying it out. I ask you to test it in cases where you have decided to take out the uterus, just before you take out the uterus, and see what happens. If you will inject, under pressure, from a Skene pipette, ten minims of 25 per cent argyrol (or collargol) into the uterus you will be able, on opening the abdomen, to study out how far the solution goes.

"The gynecological despairs are these: Sterility from the concealed, sealed tube; lurking infection, reinfected; dragging adhesions, readhering.

"What we cannot cure, let us unite to prevent."

DR. JOHN O. POLAK, in discussion, said:—"Dr. Norris has done us the honor to speak about picric acid. I wish to make a correction. The work was done by Dr. Norman Geis, associated with me at the Long Island College Hospital, and it is to him that the credit is due."

Paper: "Duodenal Alimentation and Medication." (With Lantern Slide Demonstration.)

By James Taft Pilcher, M.D.

(See page 205).

DR. CHARLES EASTMOND, in opening the discussion, said:—"It has been of a great deal of interest to me to see the complete work of Dr. Pilcher after having been associated with him, more or less, in the preparation of the material, but seeing only small scraps of the details as we went along.

"There is one particular point which I think should be emphasized, and on which I do not think Dr. Pilcher has laid sufficient stress. That is, that when a dilated, atonic or diseased stomach is to be treated by this means, it should be ascertained whether or not the pylorus is fully patent. I saw a patient referred by a physician, other than Dr. Pilcher, who had endeavored to use this method, and on an X-ray examination we found that the tube was entirely in the stomach, never having passed the pylorus; and that the food passed directly into the stomach and not into the duodenum. A complete examination by me showed a tremendous amount of adhesions about the pylorus so that there was almost complete obstruction. This is a point of the greatest importance.

"It was a surprise to me to see the results of treatment over such a short time, ten to fourteen days, on the position of the stomach.

"Several years ago with Dr. Merzbach I carried on a line of work of determining the effect of various abdominal supports on the position of the stomach and also tried to find out whether these supports were of any permanent value or of service only when applied. At that time we found that some forms of support were effective and that even after the support had been taken off that the stomach with a bismuth meal of the same quantity as used before would maintain its position two or three inches higher than before treatment. It was found, however, at that time that treatment must be carried out for five or six months. In the work of Dr. Pilcher we found by duodenal feeding practically the same results, an elevation of the stomach of from two to three inches and that this could be obtained in from ten to fourteen days. This was a perfect revelation to me, and I feel that this work which has been developed has opened up a new field and is giving the internist a new opportunity of putting the stomach at absolute rest and at the same time maintaining nutrition."

DR. MAURICE H. GROSS, of Manhattan, in discussion, said:—"My experience with 'intestinal alimentation' is limited, not because I do not have the opportunity to apply this method, but mainly because I do not find a strict indication for doing it. Our well-known and less mechanical methods have served me well. Cases that do not yield to a careful ulcer treatment are complicated ulcers (callous, adhesive), and are surgical. This mode of treatment will, in my experience, never do away with gastro-enterostomy. A large tube ought to be used for duodenal alimentation to facilitate the inflow of the liquids. Furthermore, deep introduction, at least 80 cm., is necessary to avoid regurgitation. The tube is introduced in the morning on an empty stomach (the duodenum is so reached in less than half an hour) and left in situ till 7 P.M. Three meals are given, at seven, one and seven, consisting of milk, eggs, fine cereals and sugar.

"This method can be applied in the house of the patient, the introduction only being performed by the physician, the feeding being left to a member of the family.

"To leave the tube for ten to twelve days in situ as suggested frustrates the expected results of this method, irritating locally and also causing mental depression.

"Stick to your good old methods and apply them conscientiously and you will very rarely, if at all, have to rely on the duodenal tube used for this purpose. You cannot do away with the results of Pawlow's brilliant experiments, which show the appetizing food as a great factor in inducing normal secretions and normal absorption."

DR. JAMES T. PILCHER, in concluding the discussion, said:—"As Dr. Gross prefaces his remarks by stating that his experience with this work is limited, his observations are not quite as conclusive, therefore, as one might desire.

"Relative to the size of the tube used for this type of feeding, it is not necessary to use a large tube, but merely a tube large enough to allow the passage of fluid material. Regurgitation is not a very frequent occurrence, as those who have noted the passage of bismuth through the duodenum a sufficient number of times in the course of their work, appreciate invariably the remarkable rapidity with which materials leave this portion of the gut. It is quite unnecessary to introduce the tube for three feedings and then withdraw it in the evening. These patients are perfectly comfortable when it is allowed to remain in all the time. Under the method of treatment he suggests it might be possible for it to be carried on at the house of the patient, certainly to accomplish any real result other than using it for a plaything, we have felt it essential to not only have the feedings and medications given by an instructed nurse, but that the case should be continually under the supervision of the physician. Dr. Gross states that 'leaving the tube in for ten or twelve days frustrates the expected results.' While not appreciating fully just what this criticism means I will state that it certainly is not locally irritating, and as far as my experience goes, in place of causing mental depression in many it really causes a condition of increased comfort and well-being.

"Further, while, of course, we all appreciate the work of physiologists like Pawlow, we still recognize, when one has had sufficient clinical material to bear out one's statements, that the juices secreted by the stomach are quite unnecessary in any of their component parts to complete digestion of a patient's food when it has been properly chosen, and further, that occasionally some of the older methods, as those persevered in by Dr. Gross, will fail, and even if some of the newer ones should fall likewise into disrepute, we have, as indicated by him, the gastro-enterostomy to fall back upon, which, however, has been proven by men qualified to make the statement to be not only contra-indicated but ill-advised and meddlesome surgery, particularly in non-obstructed stomachs and in the class of cases to which the speaker drew particular attention, those of gastric atony and dilatation."

TRANSACTIONS OF THE BROOKLYN SURGICAL SOCIETY.

Regular Meeting of the Society, December 4, 1913.

The President, RUSSELL S. FOWLER, M.D., in the Chair.

Program.

Report of Cases.

1. Wm. H. Maddren, M.D.,
 - (a) Fracture of Thigh. Lane Plate. Patient.
 - (b) Intestinal Obstruction from Abscess following Appendectomy. Operation (Evacuation through bowel).
 - (c) Perforation of the Appendix by Pin, without Symptoms. Specimen.
 - (d) Discussion by Dr. Royale H. Fowler; discussion closed by Dr. Wm. H. Maddren.
2. Charles H. Goodrich, M.D.,
 - (a) Tetany following Minor Operation. Patient. Discussed by Dr. Frederick Tilney.
 - (b) Adeno-Carcinoma of the Prostate.
3. Paul M. Pilcher, M.D., Specimen from a Case of Uretero-Vaginal Fistula following Operation.
4. W. L. Duffield, M.D.,
 - (a) Fracture of Humerus. Lane Plate. X-ray plates. Patient.
 - (b) Fracture of Femur. Lane Plate. X-ray plates.
 - (c) Cystic Goitre. Specimen.
 - (d) Double Uterus. Specimen.

Paper of the Evening.

5. J. S. Wight, M.D., "The Action of Hydroxyl on Bacteria." (See p. 171).
 Discussed by Dr. Henry A. Higley, Dr. W. B. Brinsmade, Dr. James Watt,
 Dr. Russell S. Fowler; discussion closed by Dr. J. Sherman Wight.

Fracture of Thigh. Lane Plate. Patient.

Reported by William H. Maddren, M.D.

The first case I have is a fracture of the femur in a young woman. The fragments were very badly rotated, and it was extremely difficult to get them back. There was an inch and a half or an inch and three-quarters shortening. I used a Lane plate and was able to straighten the bone, and used silver wire as well, in order to hold it in position. I have an excellent result, and I have the patient here if you would like to see her. The leg is no larger than the other one now. She dances now and she says that her friends notice a little throw of that left leg. It was the left leg that was fractured. It turns in just a little. She has no trouble in going upstairs, but has some in going downstairs.

Perforation of the Appendix by Pin, Without Symptoms. Specimen.

Reported by William H. Maddren, M.D.

The second case I have is one of a pin in the appendix. I have, purposely, not opened this appendix so that nobody can say I stuck the pin in. The pin was giving no symptoms whatsoever. The case was one of strangulated umbilical hernia. I ran across the pin in doing the operation. The woman died. It was necessary to resect about seven feet of the bowel altogether, but the appendix pin had been giving no symptoms whatsoever.

Intestinal Obstruction from Abscess Following Appendectomy. Operation (Evacuation Through Bowel).

Reported by William H. Maddren, M.D.

The third case I have to report this evening is that of a child five years of age, a little girl who was taken with ordinary acute appendicitis. It was the first attack. At operation, performed during the night, a single drop of pus was found at the base of the appendix. I left a drain in. The child did very nicely for the first three days. Then I removed the drain. I think that is the important part of the case. I took the drain out, had to use quite a little force to do it, and I probably opened up a new area of infection. She developed a large abscess on the left side, and obstruction symptoms again, and her condition became so severe that fecal vomiting was almost continuous, lasting about eight hours. After consultation I was prevailed upon not to open the abdomen. I thought I should do so, but I yielded to the judgment of others and did not do so. Then the father begged me to do something, and I suggested the use of the sigmoidoscope. I used the sigmoidoscope and was able to see the bowel collapsed and held partly closed, evidently by pressure on the outside. The child was in such condition that I was willing to take the risk, and I took a piece of wire, which I had at home, and sterilized it, and put it over the sigmoidoscope and opened a hole in the bowel. That is, of course, not good surgery, but it worked in this case, and the fecal vomiting stopped, and the child is well to-day.

Tetany Following Minor Operation.

Reported by Charles H. Goodrich, M.D.

A. B. S., lawyer; aged 33. A pale, muscular man, weight 144 pounds, walked into hospital at 10.30 A.M., October 25th, apparently in excellent health, except for a sebaceous cyst, size of a hickory-nut, over left trapezius, and a keloid over right trapezius following excision of a cyst five years ago. He had taken a saline cathartic on previous afternoon, and had taken no food on morning of operation, except a cup of clear coffee. Neck was shaved, and area was painted with iodine. Nitrous oxide anæsthesia—patient in prone position, neck and side of face resting on moderately firm pillow, head moderately flexed. Time of entire anæsthesia eleven minutes. Cyst and keloid excised. Linen sutures. During anæsthesia the connecting tube between tank and bag ruptured. It was repaired quickly, but during intervals two drachms of ether were used. Gas anæsthesia was then continued.

Toward end of second little operation patient's color became a whiter blue than usual, and breathing seemed to be somewhat embarrassed by tongue.

Respiration became vigorous as tongue was seized with forceps and traction made. Final sutures inserted after this without further anæsthesia. Dressing was applied, and patient laid upon his back. Color good, pulse 90, quality normal to finger. Respirations were of good quality, if traction on tongue was maintained, otherwise tongue obstructed by falling backward over larynx. After twenty minutes, consciousness failed to return, respiratory efforts seemed a little less vigorous, and the same complete physical relaxation existed. Atropine sulphate gr. 1/150 was administered and patient was returned to his bed.

11.50 A.M.—Within three minutes there ensued a persistent series of violent muscular efforts. In spite of competent restraint he would sit up and strike out with arms, aimlessly, but with astonishing power. His eyes stared wildly and unintelligently, pupils were widely dilated, face frightfully suffused. The general appearance and actions simulated the wildest type of hysteroid attacks; the color of the face and dilated pupils, the physiological action of atropine. Coaxing, cajoling, oratory and threatenings were of no avail. A colleague of eminence, certain of the hysteroid element urged inhalations of ammonia, which were given without result. The violence continued and his appearance became more alarming. Pulse 140, good quality. One-half ounce of ether was given by inhalation, causing temporary quiet.

At 12.15.—Alternating tonic and clonic spasms of muscles of entire body, opisthotonos was marked at times. Morphine gr. $\frac{1}{8}$ was administered at twenty minutes' intervals, until excessive violence was relieved at 2.00 P.M. Ice coil helmet was applied to head at 12.30, and oxygen administered continuously, for violent efforts had increased respirations and pulse. At 12.45 pulse was 180. At 1.00 P.M., pulse 194, regular, of fair quality. Normal saline solution was ordered to be given per rectum (one pint every half hour). At 1.30 violence was subsiding; hands flexed on wrist; fingers and thumbs in "obstetric position"; arms adducted at shoulders; feet and toes in plantar flexion; eyes rolled back, pupils out of sight, lids open. At 2.00 P.M. became quieter, but intermittent spasms typical of tetany continued; occasional opisthotonos; pulse 130; respirations 38, and very violent. Cervical muscles retracted almost constantly. Temperature 103.2 F.; 2.30 P.M., violence has subsided, muscular spasms continued; 3.00 P.M., least touch or irritation excites spasms, tonic and clonic, feet cold; 4.30 P.M., temperature 102, P. 144, R. 26, and resembling somewhat the Cheyne-Stokes breathing; 5.30, vomited coffee-ground fluid, and this was repeated three times; 6.30, T. 100.6, P. 110, R. 16 and regular; 7.00, very quiet, spasms less frequent, still unconscious; 10.00, T. 99.4, P. 96, R. 16.

Improvement in general condition, pulse of excellent quality and regular respirations, remained unconscious, blood pressure S. 154, D. 75, P. 79. Dr. F. Tilney examined him at 10.00 P.M., confirming diagnosis of tetany and eliciting Trousseau's sign and Chvostek's sign. Saline enemata were changed to calcium chloride gr. xx in one pint of water every three hours. Restless from time to time, with tendency to roll over and out of bed. Slight moaning. During afternoon and evening I learned from patient's wife that he had an annual attack of hay-fever, from the last of which he had recovered about October 1st; and that he was the subject of chronic constipation and "stomach trouble."

October 26th.—Condition much same, but occasionally very restless. Two doses of morph. sulph. gr. $\frac{1}{8}$ used. Lavage after vomiting of coffee-ground material. Typical intermittent spasms. Nothing swallowed. Remained unconscious all day. Temperature range for day, 99.2-101.8 F. Pulse range for day, 80-96. Respiration range for day, 16-20. Blood pressure S. 130, D. 98, P. 40. Bright, blotchy, red rash observed on chest and back. (This I have since learned has occurred occasionally for several years.)

Examined by Drs. Tilney and Browning at 6 P.M. Condition much the same, but for lessening spasms; temperature 101.2; pulse 92; respiration 18. Some retraction of cervical muscles. Pupils contracted. Patellar reflexes weak, and Babinski's sign present. No elbow reflex. Unconsciousness profound. Urine: acid, 1010, heavy trace of albumin, few uric acid crystals. Blood: leucocytes 28,000, polymorphonuclears 89 per cent, large mononuclears 2 per cent, small lymphocytes 9 per cent.

Because of (a) continued unconsciousness, so rare with tetany; (b) retraction of neck; (c) leucocytosis, and (d) history of hay-fever, Dr. Browning considered the presence of acute infectious meningitis a possibility, and advised a bacteriologic investigation of spinal fluid. Lumbar puncture was performed by Dr. Tilney. Reported by Dr. E. B. Smith. Spinal fluid clear, no tension, globulin not present, normal cell count. No bacteria in stained smear. Cultures

negative. At 10.30 P.M. he protruded tongue at request and a look approaching dim intelligence was evident for first time. Blood pressure S. 128, D. 88, P. 40.

October 27th.—Night was quiet; at 1.30 A.M. nurse noted, "seems to understand what is said to him." At 4.00 A.M. spoke for first time, saying "yes," when asked if he would like a drink of water. This was forty-one hours after anaesthesia. From this point improvement was rapid and uninterrupted. No muscular spasms were noted after lumbar puncture. Speech and clear thinking returned slowly. He did not fully realize where he was for forty-eight hours after consciousness reappeared. For one day only he seemed to have diminished muscular power in left hand. His memory was slow in returning. He could not recall why he had gone to the hospital until one week later. He was very weak upon rising from bed six days after operation, and his strength returned slowly, partly because of frequent attacks of nausea and hyperacidity. During first week at home a few minutes of sitting in chair or walking caused headache about eyes. This then disappeared. He has not as yet regained full weight, but feels well and fairly strong. He seems to have recovered completely, save for two points:

1. He has pain on lateral motions of eye globes.
2. He cannot remember going to the hospital. He remembers going to the tailor's to leave a suit of clothing, but can recall nothing on the morning of operation after leaving this shop.

The wounds of operation healed per primam:

POINTS OF SPECIAL INTEREST AND IMPORTANCE.

1. Apparently healthy, muscular, well-controlled man.
2. Minor operation—short nitrous oxide anaesthesia.
3. Protracted unconsciousness, muscular tetany, with remarkable muscular violence until controlled by morphine.
4. Marked improvement in general condition in few hours, but persistent unconsciousness.
5. Rapid improvement after calcium salt administered.
6. Rapid return to consciousness after lumbar puncture.

In regard to the violence in this particular case, I wish to add that I have never seen anything that resembled the violence of the first two hours after this anaesthesia.

I have taken the liberty of putting upon this blackboard the classification of tetany as it has formerly appeared among the writers of eminence, and I do so with an idea of trying to establish, as nearly as may possibly be done, within one or two points, the cause of this particular case, and to try to prove from it the significance of these signs.

Tetany, until recently, was considered only a syndrome. The old classification, which I think is familiar to you all, was mystifying, contradictory and very unsatisfactory. This was entirely clinical. Tetany is interesting to us as surgeons and clinicians because we would prevent its occurrence, and if we are to do this we must learn the definite cause and how to eliminate that cause from our work.

What is, perhaps, the most interesting to us now is that we can say with absolute certainty that tetany is due to a hypoplasia, inflammation, hemorrhage, or an absence of the parathyroid glands. With this in mind, it is a little difficult for us to accept this classification as being of the slightest significance, but in going over the literature on the subject and considering the various phases of the experiments which have been made on animals, it is perfectly possible for us to feel that it is consistent to accept this classification along with the theory that tetany is not a syndrome. It is a disease, and that disease is a hypoparathyroidism.

In the infantile tetany, I will show briefly why we can bring this classification in as consistent with the parathyroid idea which is well borne out.

In the infantile cases of tetany, it has been demonstrated that there are hemorrhages into the parathyroids and that the parathyroids are partially or entirely destroyed.

In the cases of tetany in gastro-intestinal disease, there have been pathological examinations and hemorrhages or scars or cysts in the parathyroids have been demonstrated, and in only one instance, a case of Dr. Kinnicut, of New York, reported in 1902, was there apparently any absence of pathological change in the parathyroids following a case of gastro-intestinal tetany. The cases of gastro-intestinal tetany are particularly interesting to surgeons as they sometimes occur after the stomach is greatly dilated, and in those cases there seems

to be a fairly consistent mortality. In a few years we may have records of cases showing that modern surgery has changed this mortality.

In the cases of tetany in acute infectious diseases it has also been proven that we have changes in the parathyroids.

In the fourth classification, cases of tetany from exogenous poisons, which might particularly interest us to-night, there have been cases reported from a number of causes. Perhaps the most prominent has been ergot. There have been cases occurring in chronic alcoholism, cases following chloroform anesthesia, in people who have worked in phosphorous, cases of lead poisoning with tetany, cases of morphine habitués who developed tetany, and one case of carbon dioxide poison who developed tetany. Ours is the first record (as far as we know) of tetany following nitrous oxide anesthesia.

In these cases there has not been, as far as I know, any investigation as to the pathological condition of the parathyroids, for more of these cases have recovered than, perhaps, any other one class.

There have been four cases of tetany during pregnancy, puerperium, or lactation where examination of the parathyroids has been made after tetany and pathological changes have been demonstrated.

The sixth class, "thyroid" or parathyroid tetany, it is not necessary for me to speak at length. We all know that after removal of a goiter, if the parathyroids are removed, the patient is likely to develop tetany. If the parathyroids are even damaged during operation the patient is liable to develop tetany. If, as happens rarely, the parathyroids are included within the thyroid gland, there, also, we will have tetany, and it is also very interesting to note that these parathyroids, when found to be removed, have been immediately re-implanted, tetany has not developed.

There have been a few cases of tetany with Graves' disease, and they have been classified by several authors as tetany with nervous disease.

In certain cases it has been demonstrated that there have been retrograde changes in the parathyroids.

The one class of cases which we find it difficult to harmonize with the knowledge which we have concerning the parathyroids, are the so-called epidemic or endemic cases of tetany occurring in certain localities, and reported by various authors.

One doctor of Vienna reported the largest number of cases, and Vienna seems to be a favorite city for these epidemics, occurring usually in young men between twenty and thirty-five years of age, without any apparent cause.

In this particular case, it seems to me, that with the knowledge that we have of the parathyroids from the various men who are experienced in thyroid surgery (and I would especially refer to the writings of C. H. Mayo), we undoubtedly had a hypoparathyroidism or a hypoplasia of the parathyroids, and it must have been due to one of four causes. The position of the patient on the table, with the head somewhat flexed (as it is thought that the infantile tetany occurs from flexion of the head during labor); or the pressure of the fairly hard pillow under his neck may have caused hemorrhage or irritation of the parathyroids; or a toxemia from the nitrous oxide gas, or possibly the retained carbon dioxide may have excited an acute hypoplasia of parathyroids that were already damaged from some previous inflammation or hypoplasia; or a toxemia from the gastro-intestinal canal with that poison, sufficient to make a temporary complete hypoplasia in a case where there had been a partial hypoplasia for a long time. Some of the pathologists who have examined the thyroids in cases dying from other causes have found parathyroids in these thyroids. It is also the idea that there are a good many people already who have a mild hypoparathyroidism lighted up by some poison or by some trauma.

Treatment of this case was largely symptomatic, except for the use of enemata of salts of calcium chloride, and this was used because of the knowledge that the parathyroids seem to govern the calcium nutrition, the calcium metabolism of the body. It has been demonstrated in dogs that those who have had the parathyroids excised have a blood content of only half of the normal calcium salts, and this can be raised immediately by the administration of calcium, and the symptoms of tetany will subside.

It is also noted that in cases of tetany with gastric stasis that the symptoms, even in the fatal cases, can be held in abeyance for a long time by the administration of calcium salts.

It would seem, therefore, that we have in tetany not a syndrome, but a disease, and it is important for us to consider the ways by which we can prevent these attacks. I feel that greater attention to marked toxemias is in

order; and particularly in view of my experience in this case, the more cautious administration of anesthetics by experts only may lead us to prevent some cases.

Adeno-Carcinoma of the Prostate.

Reported by Charles H. Goodrich, M.D.

In the case of adeno-carcinoma of the prostate, the patient, whom I hoped to show to-night, has developed an ulnar neuritis, and is so miserable that he asked permission to stay at home. The ulnar neuritis is probably due to the fact that he repeatedly raised himself on the elbow in bed during his stay in the hospital. There was no evidence of tenderness above the elbow-joint.

This gentleman is sixty-nine years of age, is very obese and a subject of moderate chronic nephritis. I have had him under observation for five months, during which time he has had occasional attacks of retention. When he urinated voluntarily he would empty bladder completely. At times he would have an attack of retention. By rectum a hard, very hard prostate the size of a small orange was made out. The bladder seemed fairly clean for a prostatic bladder. On this account it was determined to do a one-step operation, if possible, rather than the two-step operation, usually preferred. I opened the bladder. It was found to be fairly clean, and the prostate was removed. The middle lobe was about as large as an English walnut, of good size, and was shelled out very quickly and very easily. The lateral lobes formed a large, hard mass, and were removed with great difficulty. They were fibrous and very adherent, and required unusual effort and time to enucleate. There was moderate hemorrhage, and we watched the condition and used tampons until it ceased; then catheter and supra-pubic drainage by tube was instituted, and the bladder was sutured tightly around the suprapubic tube. There was free secretion from the kidneys, and the patient's condition was absolutely good after the operation. There was no abnormality at any time and he was raised in bed on the second day (that is, the first day after the operation). The catheter was removed on the fourth day, on the sixth day the drainage tube was removed and on the ninth day the bladder wound was closed. As soon as we noticed the excessively hard prostate we feared that we might be dealing with carcinoma, and the pathologist's report confirmed that suspicion. He states, however, that the only place where there are any carcinomatous elements are in the very center of the gland, and it is apparently a retrograde change of an adenoma and possibly we have a chance of cure in this case. I shall be pleased to report the result two or three years from now when it will be more significant.

Atrophy of Kidney; Pyohydronephrosis, Resulting from Accidental Injury to Ureter.

DR. PAUL PILCHER presented a specimen and said:—"I wish, briefly, to describe the case from which this specimen was removed, as it may bring up a discussion, at some future time, of the question of uretero-vaginal fistula following operation.

"This patient was operated upon in one of the Brooklyn hospitals. An hysterectomy was done and an injury to the ureter occurred, resulting in an uretero-vaginal fistula. After some five months, during which time there had been a copious escape of fluid from the vagina, she was sent to me by Dr. Griffiths, of Asheville, N. C., and a ureteral-vaginal fistula was made out. It was not an easy case to diagnose, and many cystoscopic examinations were made. However, we finally determined that that was the condition. We operated upon her and did an ureteral-vesical anastomosis. The operation was a failure, and a week after the operation the condition was just exactly the same as before the operation.

"She went to New York and saw Chetwood, and he told her that, in his opinion, it was not an ureteral-vaginal fistula, but that there was a pelvic cyst of some kind from which the fluid was escaping into the vagina. He had two chemical examinations made by pathologists in New York, and neither could find any urine in the secretion from the vagina. She came back again, however, and said she would like me to make an examination of the secretion from the vagina, and we found that it contained a grain and a half of urea to the ounce. Furthermore, it gave the reaction for creatinine and we were able to obtain the crystals of nitrate of urea, so we were still sure that we had the ureteral-vaginal fistula. We determined to do a nephrectomy. This specimen was removed.

"Dr. Sherwood presented before this society a successful case of uretero-vesical anastomosis following ureteral-vaginal fistula, the secretion passing into the bladder all right. In his case the operation was done months after

the accident took place. In a number of cases of our own, especially one where a section of the ureter was removed, the patient had an uretero-vaginal fistula, for which nothing was done, and at the end of fifteen months the urine stopped coming by way of the vagina, and cystoscopic examination showed that there was no secretion of urine into the bladder from the outside, so that her kidney must have gone on to a state of disorganization and atrophied completely. The difference between the two was that the kidney in the former case was infected, and the other was not, so it seems to me that the lesson which we learn from this particular patient and this specimen, is that when we have an ureteral-vaginal fistula with infection of the kidney, the operation of choice is a nephrectomy, and not an attempt at ureteral-vesical anastomosis."

Perforation of the Appendix by Pin, Without Symptoms. Specimen.

Reported by William H. Maddren, M.D.

DR. ROYALE H. FOWLER, in opening the discussion, said:—"In connection with this case I would like to show a series of illustrations, which some of you may have already seen, and make a few brief remarks.

"Sharp-pointed, metallic, foreign bodies represent a class by themselves. Of these the common domestic pin is probably the most frequent which is to be found in the appendix, and, according to Barnes, represents about 52 per cent of all foreign bodies which are encountered in the organ. However, they are very rare even in a very extensive surgical experience; thus McBurney and Park had each seen but two cases up to 1912. Abbe, Dawbarn, have seen one case each, Deaver, Kammerer, Keen, Mayo, Ochsner, Syms, Ewing, Schultze and Wood in exceptionally large pathological experience have encountered no cases of pins in the appendix.

"I have taken occasion to make an analysis of all the cases which appeared in the literature up to 1912. Possibly some of you have seen that contribution in the *Annals of Surgery* for September. My interest was stimulated in this subject originally in 1911, when I presented before this society a case of this nature in which the pin was entirely surrounded by a fecolith. The appendix was perforated. Of the 66 cases which I have analyzed, 23 occurred in children under 11 years of age. Thus it may be seen that about one-third of the cases were attributable to the habit in infancy of placing everything in the mouth. Predisposing factors, especially that of the occupation of nursemaid or seamstress, tailor, etc., strange to say, are mentioned in but three cases. A history of the patient having swallowed the pin appeared in but five records. As regards the pathology and lesion itself: 22 were encrusted, 7 completely and 15 partially. The appendix was perforated in 48 of the 66 cases, and in the majority of cases there was no reason to ascribe the perforation directly to the presence of the pin itself. In 4 cases the head caused ulceration and perforation. In 21 cases the pin had directly transfixed the appendix. In 4 cases pins were found in appendices contained in hernial sacs. In 8 cases pins were discovered in appendical remnants, causing a persistent sinus. Of the total number, 13 showed a peritonitis, and 30 an abscess.

"As regards symptoms: It is very unusual for a pin to exist in the appendix without causing symptoms. I believe if we could question the patient of Dr. Maddren carefully, there would develop some intimation of chronic appendical trouble. The duration of symptoms in this series was from a few hours to fifteen years. In only two cases was it stated that no symptoms had existed. The symptoms were for the most part chronic, showing acute exacerbations. Acute symptoms, without previous attacks, existed in thirteen cases. Signs of perforation without previous disturbances are very rare."

DR. WM. H. MADDREN, in closing the discussion, said:—"I am interested to note from these pictures of Dr. Fowler's that this is the only one in which the pin points toward the tip of the appendix, apparently. I hadn't thought of that before.

"So far as the symptoms in this woman are concerned: She was brought into the hospital with acute intestinal obstruction and a strangulated umbilical hernia, and she had so many symptoms for so many years that the appendix history could not be particularly inquired into."

Tetany Following Minor Operation. Patient.

Reported by William H. Goodrich, M.D.

DR. FREDERICK TILNEY, in discussion, said:—"I regret that I did not hear all of Dr. Goodrich's remarks about this case, but from what I did hear he covered the condition so thoroughly that I cannot add anything to it except, perhaps, to give in a general way my own impressions as to the symptomatology and diagnosis.

"When I saw the patient he was comatose and was running some temperature. On examining the reflexes and going over the muscular status it appeared rather clear that he had developed a peculiar type of muscular spasm which resembled very closely the so-called carpopedal spasm that we see frequently in tetany. He had a well-marked Trousseau sign and a fairly well-marked Chvostek sign. The failure to obtain the absolute pathognomonic sign was due to the fact that we were not able to take the electrical reactions. In tetany the pathognomonic feature of the disease is revealed by the way the muscles react to the galvanic current, and I doubt very much if a diagnosis of tetany should ever be made unless this reaction is found to be present, namely, the cathode opening contraction occurs at above five milliamperes when it should normally occur at twenty.

"The case is unusual in other respects. First because of the coma which supervened so rapidly after the operation, preceded as it was by a wild delirium. The latter I took to be a belladonna delirium, but in this there was some question, and I think Dr. Browning thoroughly disagreed with me as well as others. Dr. Browning, when he saw the case, suggested the possibility of a Pfeiffer infection, but lumbar puncture disproved this as a possibility.

"The peculiar turns which tetany may take are, perhaps, well illustrated by a case which I saw last winter. Dr. Royce had done a rather difficult delivery and the child, on the second day, developed a peculiar spastic tetraplegia or paralysis of all four extremities. The legs were drawn up on the chest and the arms adducted and flexed. The doctor was much afraid that hemorrhage into the brain had caused the condition. At first, I also thought that this was the case, but on going over the facts more closely, it seemed unusual that the condition should develop two days after birth, and that the muscular spasm was not continuous. Dr. Royce told me that the mother, on taking the chloroform for the purpose of facilitating delivery, developed a peculiar spasm in the hands and feet. I then began to see more clearly. The mother, he said, when she received the first few whiffs of chloroform, drew her hands up in the peculiar position that we recognize as characteristic of tetany. Her feet became extended and the toes spread out in the typical carpopedal spasm. She caused a great deal of trouble, due to the tenseness of all of the muscles, during delivery. It is quite a common thing for chloroform anæsthesia to produce tetany, and women who develop tetany during their pregnancy are very likely to give birth to children who some time in the first year or two develop manifestations of the disease. We, therefore, made a diagnosis of tetany in this case, and I have heard since then (within the last month) from the father of the child that all the symptoms have disappeared, and the child shows no signs of the spasm, except when it has colic. This case, I think, like Dr. Goodrich's, shows the peculiar turns which tetany may take, and Dr. Goodrich's case undoubtedly becomes a contribution, demonstrating how little we know yet as to the endermic toxemias."

Large Cystic Goitre.

Presented by W. L. Duffield, M.D.

The patient from whom this goitre was removed was a colored woman, thirty-nine years old, who complained mainly of dyspnœa, insomnia, vertigo and hoarseness.

At the age of fourteen she first noticed a swelling of the neck which began in the median line and which slowly, but constantly increased in size, extending laterally particularly to the left where it was moderately painful and somewhat tender.

Her dyspnœa existed for a number of years, and for one year the vertigo has been marked and annoying, and for the same period of time insomnia has been extreme. Hoarseness has been variable in intensity.

Her physical condition was otherwise normal, except for a moderate tachycardia, 100 beats per minute, but with no heart murmurs.

The portion of the gland removed consisted of the left lobe, and roughly represented about one-half, or possibly three-fifths of the entire mass.

The operation, done on November 26, 1912, consumed one hour and twenty-two minutes, from which she made a very satisfactory recovery, though there was a moderate secondary hemorrhage into the capsule, necessitating drainage until December 22, 1912.

Upon removal the gland weighed twelve ounces, and now, after a year's preservation in alcohol, measures $5 \times 3\frac{1}{2} \times 2\frac{1}{2}$ inches.

(Continued in July)

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THE LIMITATION OF OFFSPRING BY THE ARTIFICIAL PREVENTION OF CONCEPTION: FROM THE INDIVIDUAL, SOCIAL AND EUGENIC STANDPOINTS.*

By William J. Robinson, M.D.,

New York.

IT is rather strange that a Society whose members' living depends upon as many children as possible being brought into the world should be anxious to listen to a lecture which is to present arguments for the limitation of children. It is almost as if a Catholic or Methodist congregation invited a speaker to present the merits of agnosticism or atheism. Or as if the National Association of Manufacturers or the coal barons invited a lecturer to present to them the arguments for socialism or syndicalism.

But it is a good sign of the times. It shows that a greater and greater number of people are willing to hear the other side. It shows that the world does move and that many conservatives, while hugging their conservatism or obscurantism ever so tightly to their hearts are at least beginning to admit that there may be some truth in the more advanced and the radical point of view, and that they are at least willing to give it a hearing.

And should I say something which may go against your grain, something with which you may for the moment violently disagree, then try to be tolerant and permit the idea to pass through your mind that maybe the reader of the paper, who has given the subject special attention, is after all right, and maybe it is you that are wrong. I do not ask you to accept my opinions, or anybody's opinions for that matter, on authority, but I do ask you to listen to them open-mindedly, to weigh the pros and cons, to try to digest them, and then reach your own conclusions.

The subject which we are to discuss tonight is one of transcendent importance. I know of no single question that is of such far-reaching, vital importance to the human race. Directly or indirectly it touches every man, woman and child—nay more, it touches not only the living child, it touches the child not yet born. If I have devoted so much time to discussion of the subject by pen and by word of mouth, it is because I sincerely believe that upon the proper solution of this

* Read before the Brooklyn Pediatric Society, May 27.

question depends, to a great extent, the welfare of the human race, the welfare of those living and of those to come after us.

But before we can discuss any question intelligently we must know just what the subject under discussion is. It is easy to approve or to condemn, but before you have a right to either approve or condemn, before you can do so honestly and conscientiously, you must know what it is I and my followers advocate, what it is we preach and demand.

Briefly it is this. We believe that under our present economic conditions, and under any conditions, human beings should be able to control the number of their offspring. They should be able to decide how many children they want to have and when they want to have them. And to accomplish this result we demand that the knowledge of controlling the number of offspring, in other and plainer words the knowledge of preventing undesirable conception, should not be considered criminal knowledge, that its dissemination should not be considered a criminal offense punishable by hard labor in Federal prisons, but that it should be considered knowledge useful and necessary to the welfare of the race and of the individual; and that its dissemination should be as permissible and as respectable as is the dissemination of any hygienic, sanitary or eugenic knowledge.

There is no element of force in our teachings; that is we would not force any family to limit the number of their children against their will, though we would endeavor to create a public opinion which would consider it a disgrace for any family to have more children than they can bring up and educate properly. We would consider it a disgrace, an anti-social act for any family to bring children into the world whom they must send out at an early age into the mills, shops and streets to earn a living, or must fall back upon public charity to save them from starvation. Public opinion is stronger than any laws, and in time people would be as much ashamed of having children whom they could not bring up properly in every sense of the word as they are now ashamed of having their children turn out criminals.

Now no disgrace can attach to any poor family no matter how many children they have, because they have not got the knowledge, because our society prevents them from having the knowledge of how to limit the number of children. But if that knowledge became easily accessible and people still refused to avail themselves of it then they would properly be considered as anti-social, as criminal members of the community.

As far as a couple are concerned who are well-to-do, who love children, and who are well capable of taking care of a large number, we would put no limit. On the contrary, we would say: "God bless you, have as many children as you want to; there is plenty of room yet for all of you."

And I might as well state here that in this respect we differ from our neo-malthusian friends in European countries with whom we are otherwise in perfect accord. Our European neo-malthusian friends would put a limit to the number of children even of the well-to-do and rich. They claim that the means of subsistence are but limited, that Europe, that is Western Europe, is about as thickly populated as it can be. And they are afraid that the birth of a large number of people, even rich and well-to-do, means the taking out of the bread from the mouths of somebody, from the mouths of the poor. We

are not afraid of it. We know that America can support in perfect comfort millions and millions more of people. This shows how geography and economic conditions influence our opinions. Our neo-malthusian friends across the sea are actuated in their propaganda more by the fear of a famine that will eventually stare the race in the face if the proper check is not put upon the birth rate.

I, on the other hand, was attracted to the limitation of offspring propaganda by the individual sufferings and misery resulting from too many children which I witnessed among my friends and acquaintances and among my patients in the early years of my practice. Not that I do not recognize that eventually in the future the race will, in self-preservation, have to put a strong check upon its birth rate, but I am dealing, I always prefer to deal, with the present, with the living people of to-day. Somehow or other I have always been of the opinion that if we deal intelligently with the present we can safely let the future take care of itself. I even recognize that some countries of Europe are even now so overpopulated that a check has become necessary, but I am dealing with the United States and not with Europe; one country at a time is enough. And with this introduction we may proceed.

THE TWO POINTS OF VIEW.

The effects of the limitation of offspring might be discussed under two separate heads: the effects upon the individual family, and the effects upon the race as a whole. But this subdivision would really be an artificial one. You cannot injure or benefit the individual without injuring or benefitting the race, and you cannot injure or benefit the race without injuring or benefitting the individual. The race is not something abstract, separate, apart from the individuals composing it, any more than the body is something different and apart from the cells and organs composing it. The body is healthy just in proportion to the health and harmonious working of its individual cells. If in a race of one million people one person is unhappy and inefficient, that race is one-millionth unhappy and inefficient. If five hundred thousand individuals of that race are unhappy and inefficient, then that race is one-half unhappy and inefficient. And if every individual in that race is unhappy and inefficient the entire race is unhappy and inefficient. It is, therefore, the individual and the individual family that we have to look out for, and if each individual is brought to the highest standard of happiness and efficiency we need not worry about the race; the entire race will be happy and efficient.

THE SPECTRE—TOO MANY CHILDREN.

That under our present economic conditions the fear of too many children is a most frightful spectre which terrorizes the ordinary workman and the middle class and professional man, is something which requires no discussion. Anybody who has eyes to see, sees it on every side. There would not be this frenzied search and demand for contraceptive knowledge if this were not so. That an unlimited number of children is a curse also to the poor, requires almost no argument. There is not a physician who has not had cases in his practice of families which started life in a respectable manner but which become quickly demoralized, financially and physically, by children coming in rapid succession. Every physician will tell you the gradual change in feelings on the part of the parents with the appearance of each successive child. While the first child and perhaps the

second are generally received with genuine joy, unless they come too soon after marriage, the third and fourth are met with indifference, while the fifth and succeeding ones are considered catastrophes, and many a father and mother hope for a miscarriage or pray that it be still-born or be carried off soon after birth. And every physician will tell you of cases in which their endeavors to bring to life a still-born child were not at all considered by the parents, by the father particularly, with favor. More than one physician told me that when practicing artificial respiration on a new-born babe he was told by the father to leave the child alone, that it was not worth while bothering about.

That a family of three or four can live better, more comfortably, on a certain sum per week, say twenty-five dollars, than can a family of six or seven, goes without saying. Only the obtusest mind will deny that, and still it is being denied day after day. A workingman should not have more than two children. Every child after the second is individually and racially a calamity. It means that the mother's health is being exhausted, it means that she cannot attend as properly as she should to her first children, it means that the succeeding children are taking away a part of the indispensable food and clothing from the first children, it means that the first children will not be able to get the necessary bringing up and education that they otherwise would, it means that they will be sent to work earlier than they otherwise would, it means glutting the labor market with wage-slaves. In short, in my opinion, too many children in other than well-to-do families is a crime. It is a crime against every member of the individual family, the father, the mother, the first two children and the succeeding children, and a crime against society.

THE BOURGEOIS REMEDY.

This being so, what is the remedy? Two remedies are proposed by our bourgeois philosophers and sociologists. One is that the poor should not marry until they are able to support a family, or they should marry late in life. The advice is as stupid as it is vicious. If the poor, embracing in this term not only the workingman but many professional men, writers, small business men, etc., were to wait until they could support a family properly, they would not be able to marry while alive. They would have to wait until they went to heaven, or until they were in their second incarnation. But if the advice to marry late were universally followed, it would prove an irreparable injury to the human race. It would mean an indescribable increase in prostitution, in sexual perversions, in sexual weakness, and in venereal disease. The fathers would come to their nuptial beds sapped of all vitality, debilitated, infected. And as late marriages among men means necessarily also late marriages among women, the mothers would be neurotic or psychotic old maids, and what children such unions would give rise to can readily be imagined.

The second advice is to abstain—that married people should abstain from sexual relations. To give advice which we know is impossible of being followed is the acme of fatuity. But where married people were foolish enough to attempt to follow this advice the effects were pernicious. For married people to attempt to abstain for any length of time means to lay the foundation for irritability, weakness, nervousness, or even genuine neuroses, and a cooling or even destruction of the affections. It means more, it very often means driving

the husband into the arms of prostitutes, with the possible risks of venereal disease.

Considered from every point of view these two pieces of advice, to marry late or to abstain when married, are useless because impracticable and pernicious, because if they could be followed they would result in untold injury to the individuals and consequently to the race.

But a remedy must be had. We have found remedies for most ills that afflict the human organism, and it is only a matter of time when we will find remedies even for those ills that are still baffling us. The only thing that distinguishes the human being from other animals is his intellect. It is by the aid of the intellect alone that we have been fighting and conquering Nature, wresting from her and unraveling her secrets, balking her at every step when it is necessary for our welfare. The human intellect has given us remedies which, while permitting men and women to marry at the proper age and to live a normal sexual life as Nature intended, still help them to control the number of their children. And to save my life, I cannot see what there is wrong in people who cannot afford to have many children using means which will prevent them from having many, which will help them to have just as many as they wish to have and can afford to have, and just at such times as they wish to have them.

The first objection we are apt to hear when we advocate that the knowledge of the use of preventives be easily accessible is that such knowledge would have dire effects, that it would decrease the population to such a degree that it would soon come to a standstill, then it would begin gradually to diminish and finally to die out—in other words, that the human race would commit suicide. That this objection is worthless we can prove by a consideration of individual families as well as by a consideration of entire nations. Are families who possess a knowledge of efficient and harmless preventives perfectly childless? Of course not. There are hundreds and thousands of families now throughout the world who employ artificial preventives regularly, but very few of them are altogether childless. They have one, two or three or even four children. They regulate the time when they want to have the children and their number, but very few indeed decide to remain barren altogether.

That there is a small percentage of men and women who are so devoid of the parental impulse that they would utilize the preventives so as never to have any children I will admit, but I ask you in all seriousness: Is it not better for the race that people who are so utterly devoid of that something that they call the parental instinct that they do not want to have any children at all, should not have any? Is a child conceived, born and brought up against the will of the parents a spectacle to be enthusiastic over? On the contrary. In my opinion this fact is rather in favor of the use of artificial preventives, that the race can speedily eliminate those men and women who under no circumstances wish to become fathers and mothers.

When I see to what interminable trouble and expense some men and women go in order to have children; when I see to what tortures and risks, endangering her very life—I am speaking of numerous Cesarean sections—a prospective mother will undergo in order to have a living child, I have no fear that the use of preventives will result in the dying out of the human race.

But we have better proofs—proofs unanswerable and undeniable.

Here we have a whole country, Holland, in which the prevention of conception is legally sanctioned, in which the use of preventives is practically universal—and is the country dying out? On the contrary, it is increasing even somewhat more rapidly than before, because we have this remarkable and gratifying phenomenon to bear in mind, that wherever the birth rate goes down the death rate goes down *pari passu*, or even to a still greater degree. This can be proven by statistics from almost every country in the world. For instance, in 1910 the birth rate in Holland was 32 and the mortality 18, in 1912 the birth rate fell to 28 but then the mortality rate fell still lower, namely to 12, so we see that there is an actual gain even in population, instead of a loss. And in New Zealand, where the sale of contraceptives is practically free, the birth rate is now 20 and the mortality rate is 10. Does that look like race suicide? On the contrary, there is a steady increase of the race of ten per cent, while sickness and death of children, with their attendant economic and emotional waste, are reduced to a minimum.

This decrease of the death rate is very easy to understand, because the fewer children a mother has the better care she can take of those she does have. The economic condition of families with fewer children is better than of families with many children, speaking, of course, of the same strata of society. And the mother's health not being exhausted by too frequent child-bearing, nursing and bringing up of children, her health is better and she gives birth to healthier and more resistant children. In short, from every point of view the use of artificial means of preventing unsuitable pregnancy is a benefit to humanity.

I admit that when the knowledge of the use of preventives becomes really universal the rate of increase of the human race will become very much slower. But there is certainly a great difference between a slow increase and suicide. Why is it necessary that the human race should increase in numbers rapidly? I permit myself here to quote a paragraph from another paper of mine on the same subject:

Is an increase in numbers so very desirable? In fact is it at all desirable? Ask yourself that question, if it never occurred to you before. Is there any greatness or any happiness in numbers alone? Is China with its more than four hundred millions any happier than we, who can boast of only ninety millions? And does China from any and every point of view amount to as much as does the United States, which has only about one-fifth of its population? And would not any one of you prefer to be a citizen of Italy, or Norway, or Sweden, or the little republic of Switzerland, which has fewer inhabitants than has New York City, than to be a subject of the brutal, murderous Russian Czar who reigns over one hundred and forty millions? No, there is no honor, and there should be no pride, in numbers merely.

I prefer a commonwealth of five million people, all of them healthy and contented, all doing congenial work, all having work to do, all materially comfortable, all educated and cultured, all free to think and free to express their thoughts, with high ideas of a greater future and a higher humanity, to an empire or a republic of a hundred millions, all fighting, all struggling, all cutting each other's throats, all in fear of starvation, with senseless luxury on one hand and shameful poverty on the other, with killing idleness on one hand and killing overwork on the other, with bursting over-satiation on the

one hand and exhausting starvation on the other; with millions tramping the streets and highways naked and hungry, with millions of human beings illiterate, held in the clutches of superstition, selfishness and brutishness; with thousands and thousands of imbeciles, criminals, perverts, grafters, prostitutes—female prostitutes who sell their bodies and male prostitutes who sell their minds, their ideas and convictions—I prefer, I say, the above-described small to the above-described larger commonwealth.

No, numbers alone, I repeat, do not count. With Spencer, I despise that vulgar conception which considers a large population, large territory, and big commerce as its highest ideal, its noblest aim. With Spencer, I would say that, instead of an immense amount of life of low type, I would far sooner see half the amount of life of a high type.

There is one point, however, that should give all true friends of humanity cause for alarm. While the birth rate has decreased markedly in every civilized country in the world, in those countries in which the discussion of the use of preventives is prohibited, and in which the obtaining of preventive means is most difficult, the decrease in the birth rate has been most marked in the higher and in the well-to-do middle and professional classes. In other words, in countries like England and the United States, the most marked diminution of the birth rate has been among the aristocracy, among the cultured classes, among artists, lawyers, physicians, clergymen, merchants, etc., while it has been but slightly diminished among the workmen and among the poor and very poor. In fact, you can take it as an axiom that the number of children is in inverse ratio to the social standing, culture and earning capacity of the parents. In still other words, it means that those best fit to breed children, those most likely to transmit a desirable heredity, and those most able to bring up children, are breeding less and less, while those least able to and least capable of bringing up children and giving them a decent education and a decent start in life, and those most tainted with disease, with alcoholism, mental instability, epilepsy, insanity, moronism, etc., keep on breeding unrestrainedly. What that means for the future of a nation the most sluggish thinker can easily perceive. It means that if no check be put to this state of affairs eventually the mental and physical standard of the race will be lowered, that the race would begin to degenerate.

This is something which no true friend of humanity can contemplate with equanimity. But what is the remedy? To exhort, beg or command the better classes to become more prolific is, as you all know, perfectly fatuous. Nobody whose economic means or inclinations are against having many children will sacrifice himself or herself and have six or eight children instead of two or three, just in order to save the race. Nobody who has acquired the knowledge of limiting his offspring will throw that knowledge away, for altruism has not reached and never will reach this stage, and besides every man and woman will think: Oh, our two or three children will not make any difference. In other words, the better classes, or if you prefer the so-called better classes, will continue to have a very limited number of children—so the only remedy we have at command is to instruct the lower classes to make use of the same means so that they may not by their unrestricted brooding overwhelm the better elements, pollute the race-stock and add to human misery.

IT WILL LEAD TO IMMORALITY.

This objection seems to be the strongest one in the opinion of some even otherwise very rational thinkers. I have heard it from freethinkers, from socialists, and from some very sincere, cultured and educated men. People who have gotten over the "race suicide" bugaboo still consider this a serious objection to the popular spread of the knowledge of contraceptives. They are deeply afraid that if this knowledge became universal, immorality, by which they mean female unchastity, would become universal. They are convinced that what keeps our girls and other husbandless women chaste is the fear of pregnancy and nothing else. In other words, they openly acknowledge that our entire adult womanhood is mentally unchaste and what keeps a large proportion of them from physical unchastity is not morality but the fear of consequences.

To this argument, which next to the race suicide argument, seems to be the most formidable, and to a good many the most unanswerable, leaving out the answer that virtue which is such by fear is no virtue at all, and that virtue that needs continuous guarding is scarcely worth the sentinel, my answer is that the fear of pregnancy is not the chief deterrent. What keeps most of our unmarried women chaste is the general bringing up, the general and religious education, the custom of the country, hereditary influence, and the general monogamous tendency of the female.

On a certain percentage of the female population all these factors exert no influence now, and the only result the knowledge we advocate would have is that illicit relations would be entered upon with less terror, perhaps, with less anxiety than they are now, but far from increasing immorality it would rather diminish it. I will explain what I mean. The fear of pregnancy may act as a deterrent in a number of cases to the performance of coitus in the natural, normal way, but instead of that it leads to numerous perversions of the sexual act, which are as a rule extremely injurious to the health of both partners. I know whereof I am speaking. I see daily the results of these sexual perversions in married couples, in engaged people and men and women who just keep company, and in men and women who are just acquainted; and I can assure you that while the fear of pregnancy, as I said, does act as a deterrent in many cases, say even in a large number of cases, it does not act as a check against sexual immorality. On the contrary, it increases it, because I consider sexual perversions entered into out of fear of pregnancy more immoral than natural relations.

And if some women are bound to have illicit relations, is it not better that they should know the use of a harmless preventive than that they should become pregnant, disgracing and ostracizing themselves and their families, or that they should subject themselves to the degradation and risks of an abortion, or failing this take carbolic acid or bichloride, jump into the river or throw themselves under the wheels of a running train? I may be wrong, my views may be strabismic, but I know that I am kinder and humaner than those cruel bigots who demand that any woman who has indulged in illicit relations should expiate her "crime" by death or by all the humiliation, ostracism and suffering which are now imposed upon the mother of an illegitimate child.

No, I am quite sure that the knowledge of the use of preventives will not increase immorality, using that term as a synonym of female

unchastity. It will merely change perversions and injurious practises into natural relations, which is a gain and not a loss.

IT IS INJURIOUS.

This objection we still meet quite frequently, and we hear it not only from the laity, who are not supposed to know any better, but from physicians who are supposed to know better. A whole catalogue of ills are given which are likely to result from the use of preventives of conception: congestion, inflammation, cancer, nervousness, etc. This statement is unqualifiedly false. Physicians who make such statements do it either because they are ignorant or because they know only of some methods that *are* injurious, or confuse prevention of conception with abortion, or they do so deliberately to mislead the people, to prevent them from engaging in what they call an immoral, ungodly and demoralizing practice.

There is absolutely nothing injurious in the proper modern methods. More than once has it been noticed that women who suffered with congestion, leucorrhea, catarrh of the cervix and vagina, were improved by the use of modern contraceptives. Of course there is no doubt that there are injurious methods of prevention, that certain mechanical devices and poisonous solutions are in use which may in time produce injury to the parts. But are you going to condemn harmless methods because there are methods which are not harmless? Because decomposed food is injurious are you going to condemn all food? Because an alkaline soap is irritating are you going to condemn the use of all soap? It is absurd, and still this is the kind of argument the opponents of the limitation of offspring have recourse to.

IT IS NOT SAFE.

Our opponents claim that there is no absolutely sure means of the prevention of conception, that the best of them fail once in a while. This is true and isn't true. It is true in the sense that there is not one single means that is suitable for everybody, but it is not true that a certain means will not prove absolutely efficient in a certain given case forever.

And this uncertainty is due to the fact that the whole thing is done secretly, clandestinely, as if a crime were being committed. If the thing was free and legal, if the matter could be discussed freely in the journals, the best methods would be learned quickly enough, and each one would have no difficulty in finding the means most appropriate to herself.

But even as it is now, the methods are infallible in 98 or 99 per cent of cases, and while this may be no consolation to the hundredth case who happened to be caught, we do consider that for the race as a whole it is even now a means of the most wonderful potency for good.

IT PRODUCES STERILITY.

This is another one of the fallacies which are heard frequently from clerical and medical opponents of the limitation of offspring. It could have only originated from the confusion of prevention of conception with abortion, or again perhaps from the fact that those opponents have only known of methods which were particularly brutal and atrocious.

We know that the proper methods of prevention have absolutely

no effect whatever in causing sterility. As long as woman uses the preventive she is safe, as soon as she gives up the use of the preventive she becomes impregnated. Sometimes a single omission of the use of the preventive causes impregnation, as many women have found out to their sorrow.

IT IS AGAINST RELIGION.

I am not dealing here with pious hypocrites, but some very earnest and sincere people have brought up this objection, that the prevention of conception is reprehensible because it is against religion. I know of no place in the Bible where the prevention of conception or limitation of offspring is prohibited. I do not claim to be a great student of the Bible, but when I spoke recently at St. Mark's Church this point was brought up and the minister said distinctly that he did not know, at least he could not think at the time of any place in either the Old or the New Testament which contained anything condemning the use of preventives.

But assuming that it did contain an explicit injunction against their use, I would simply ask those whose conduct is guided by the Bible to refrain from using those means but not to attempt to force their conduct upon people who are guided by different standards of morality.

And besides when a man brings in religion as an argument then no further discussion is possible. I do not sneer at religion, I can even sincerely respect a sincerely religious person, for I know that many of them are both earnest in their convictions and humanitarian in their endeavors, but I simply say that this is a question which we cannot discuss. Religion is a matter of faith and not reason; you believe so and so and that is all there is to it. Another man believes differently. Let him get his salvation in his own way as long as he does not injure you.

IT IS IMMORAL.

This argument is the same as the religious argument. It all depends on what you call immoral. Why the use of a harmless mechanical or chemical agent before or after coitus is more immoral than the use of the same or similar thing by a woman suffering with leucorrhea, I cannot for the life of me see. Immoral is something that is injurious to the community, to another individual, or to the person himself. As I am showing in this paper by the use of irrefutable arguments and figures, the use of such contraceptives is not injurious to the persons who are using them, they are certainly not injurious to one's neighbors, and far from being injurious to the community they are helpful to it by raising the hygienic, eugenic and economic standards. So wherein does the immorality consist?

I am afraid that those who bring up the immorality argument have created a fetish which they would find great difficulty in maintaining on its pedestal if forced to present real arguments. But, again, as I said in discussing the religious argument, some people have peculiar ideas as to what is moral and immoral, and if one has made up his mind that a certain action is immoral it is no use discussing matters. Such people are generally impervious to argument. As to those men who go even further and say that wives who use preventives are nothing but monogamous prostitutes, and I have heard that argument from apparently sane people, one of them even calling himself a social-

ist, I can only say that with such people it is useless to argue. We can only give them tit for tat by calling them imbeciles.

THE MORAL STANDARD OF THOSE WHO MAKE USE OF OR ADVOCATE THE USE OF PREVENTIVES.

Philippics have been delivered and pamphlets and books have been written against those who make use of preventives and against those who advocate the rational limitation of the number of offspring. They have been called immoral, decadent, degenerate, egotists, low creatures devoid of responsibility.

It would be easy to answer by slinging epithets back at our critics and calling them fools and imbeciles incapable of logical reasoning, unwilling to be convinced and crawling into a corner when they are presented with arguments which they are unable to answer, when they are shown proofs which they are unable to refute. But calling names, while a great personal satisfaction occasionally and an excellent safety valve once in a while, is no argument.

I will admit that among the upper classes, and among a certain percentage of the middle classes, the decision to limit the number of children or to avoid having any at all, does not flow from very high motives, that this decision is even selfish, egotistic in the common sense of the term, that it flows from a desire on the part of the parents not to have their comfort or personal pleasures interfered with, that they do not want to have to go through the trouble of bringing up children. But this accusation is distinctly untrue when applied to the vast majority of the middle, professional and working classes. Far from being due to a lower morality, it is due to higher morality. Far from being due to a lack of responsibility, it is due to a heightened sense of responsibility. The animals, and the people nearest to them, have no such responsibility; they breed unrestrictedly, leaving nature or God to take care of their offspring or to kill it off as they may see fit. Thinking parents, however, are so imbued with the sense of responsibility in bringing a human being into the world under our present social and economic conditions, that we cannot blame them, but we must praise them for refusing to bring too large a number.

WHAT LIFE MEANS AT PRESENT TO THE MILLIONS.

I am not an extremist, I do not take one stratum of society, namely the lowest, and try to make believe that all humanity is as wretched as that lowest stratum. I always pride myself on my sane and well-balanced radicalism, and I am certainly not a pessimist. To me personally Fate has not been particularly cruel, in fact many think that it has been particularly kind. I am distinctly an optimist. I believe that this world is going to be the most glorious world to live in and there will not be an unhappy creature in it, but to assert that this is the best of all possible worlds at the present time, is to make a statement which is stupidly, palpably false. Its falseness can be proven in five minutes by going outside and just looking about us.

I know that there is plenty of joy, plenty of happiness, plenty of pleasure in this world, but isn't it true that the pain overbalances the pleasure in this world many hundredfold? Is it not true that we have many millions of working people in our country who have really nothing to live for, working from morning to night merely for their material necessities, merely to keep body and soul together, but without any refining influences, without any artistic or intellectual pleas-

ures? Is it really reprehensible for a working family that earns eighteen or twenty dollars a week to refuse to have more than two children, because they know that if they have more than two the first two will have to be neglected to a certain extent, and to a certain extent will have to be deprived of food and clothes which they need? Could you blame them even if they refused to have any children, because having no pleasures whatever in life, disgusted at the continual, monotonous drudgery of their work, they refuse to bring other creatures into the world that would have to live the same cheerless, hopeless life?

What is there for the intelligent class-conscious workman, holding a twelve dollar or fifteen dollar job, or having to hunt for a job half of the time, to induce him to bring more wage-slaves into the world? And talk to the really intelligent middle class or professional man, the man who has learned to look at the world with clear eyes. You will find that he complains as bitterly, some of them even more bitterly, than does the workman. Until twenty-five or twenty-eight he has to prepare for a career. With our increased educational requirements the age at which professional men graduate and begin to earn a living is advancing further and further from year to year. For ten or fifteen years it is a bitter, hard, sixteen- or eighteen-hour a day struggle to build up a practice, to get a clientele, or to build up an independent business. And in this desperate struggle nine-tenths fail, and lead to the end of their days the lives of drudges, just merely making a living. About ten per cent come out victorious, get to the top; but when they have reached the top they find by looking at the family Bible that they are already forty-five or fifty years old, that they are already on the decline, or will approach it within very few years, and that the material independence, position, fame, etc., do not give them the same pleasure and satisfaction that they expected to enjoy when they were struggling for them so ceaselessly and perhaps so relentlessly.

That there are a few people who seem to have been born with silver spoons in their mouths, for whom everything is prepared, who have nothing to struggle for, and to whom life seems to be an inexhaustible source of fun and pleasure, I admit. But their number is so small as to be entirely negligible, and is much more, is a thousand times, overbalanced by the men and women on the other end of the scale to whom life is a continuous source of suffering, pain, nay agony and torture, from the very day they are born until they are put away in a cheap pine coffin in the bosom of dear mother earth.

I believe that to become convinced that this is not the best possible of worlds, and that for many millions of people this life is nothing but a round of monotonous, senseless drudgery even if devoid of actual pain and suffering, it is only necessary to take a trip, not to the slums, but just in the subway, during rush hours. I thank my fates that it is but very seldom that I have to ride in the subway, but when I do, particularly if in the rush hours, the spectacle fills me with inexpressible sadness.

Just look at the faces—not a happy, contented face in the ten cars of the express train. Just analyze them. Tense, gloomy, dissatisfied, grouchy, distinctly unhappy, cruel, stupid or vapid, such are the expressions of practically all the faces you see there. And what are they all doing there? For what reason are they jostling or being jostled, crushing or being crushed, trampled or being trampled upon,

twice a day, morning and night of every week-day? For what reason? To go down into factories or shops or offices to do useless and disagreeable, or useful but uncongenial, or in general injurious work for eight or ten or twelve hours a day. And what for? Merely to make eight or ten or twenty dollars a week, just to support the body sufficiently to be able to work again. It is work to have what to eat and drink, eat and drink to be able to work. And this grind goes on day after day, week after week, year after year, without any prospect of change for millions of people.

It is to me one of the great tragedies of our present system that people have to spend almost, if not the entire day, merely to earn enough to make a living. The work necessary to make a living should be the incidental work, and it certainly should not take away more than four hours a day from any man or woman. Of course, if a man loves his work that is another matter. Then he may work eighteen hours a day until his eyes close in sleep from sheer exhaustion.

No, this is not a pleasant world to live in at the present time, and it is a sign of a putrid morality and a petrified mentality to curse and to throw stones at those members of the middle and working classes who believe that it is their duty to themselves, to their children, to humanity at large, to limit the number of their offspring within narrow bounds. Far from being a sign of low morality the conscious control of the number of children is a sign of high morality. And I will repeat what I said before, that far from being a sign of a lack of responsibility it is a sign of a high sense of responsibility, of foresight, of love, of the true feeling of humanitarianism.

THE PREVENTION OF CONCEPTION AND ABORTION.

To this point I must devote a few lines, for the greatest obstacle we meet in our prevention of conception propaganda is the confusion, both on the part of physicians and on the part of the laity, of prevention of conception with abortion.

Just as the statute books speak of the two in the same sentence, meting out the same severe punishment for both, so the physician and the layman often speaks of the two as if they were one and the same thing practically, as if the one were as objectionable or as criminal as the other, and as if believing in one necessarily meant accepting the other.

This almost universally prevalent confusion is, as I said, one of the greatest obstacles in the spread of the prevention of conception propaganda, and it is important to clarify this confusion and to shed some light on the subject. Not only do contraception and abortion not belong in the same category but I can truthfully say that one of the principal reasons, one of the strongest motives that makes us advocate contraception so persistently and so assiduously is because we want to do away with the evil of abortion as far as we can, for we do consider abortion a terrible evil.

Not being engaged in the lucrative practice of the abortionist, never having committed an abortion myself, I am free to speak of the subject calmly and frankly and am not under obligation to become hysterical in condemning it publicly as are many of those who are practicing it secretly. I say frankly that there are cases, many cases, in which not to induce an abortion is much more cowardly, much more cruel, much more dishonest, than it would be to induce one. The peace of mind, the honor, the very life itself, and not only of one person but of several persons, very often depend upon the artificial

emptying of the uterus. And under our present social and economic conditions the professional abortionist, much as we may despise or condemn him, has more than once proved a real benefactor, in saving the sanity, the health and the life of a frantic young woman and her frantic family.

But admitting all that, I still consider abortion a real, a serious evil. It is degrading and humiliating to the woman. It is always accompanied with some risk, if not to the life at least to the health of the person (though the dangers of the operation when performed under proper conditions have been greatly diminished they have not yet been entirely eliminated and it is a question if they ever will be) and it is apt to lead to abuses. For this and various other reasons all true humanitarians are endeavoring to do everything possible to diminish the evil of abortion, which is constantly on the increase. And one of the most effective remedies to diminish the evil is the universal knowledge of the proper means of prevention of conception.

And just as it is disgraceful for our statute books to speak of prevention and abortion in the same sentence, meting out the same punishment to both, so it is disgraceful for any physician to get up and talk of the two in the same breath as if they belonged to the same category.

Doesn't any person with any sense see that the two are entirely different, not only in degree but in kind? In inducing abortion we destroy something already formed; we destroy a fetus or an embryo, a fertilized ovum, a potential human being. In prevention, however, we merely prevent chemically or mechanically the spermatazoa from coming in contact with the ovum. There is no greater crime or sin in this than there is in simple abstinence, in refraining from sexual intercourse.

And while everybody is, of course, entitled to his opinions and anybody may entertain any opinions on the subject of prevention that he chooses, nobody has a right to confuse the issues and speak of prevention and abortion as if they were the same or similar things, and I trust that in the discussion that is to follow my esteemed opponents will bear this point in mind.

If I were engaged in a debate on the subject, I would thus summarize the case for the defense, and I believe that my opponent would find himself in great difficulty to contradict or refute my arguments. I would say:

1. The reason many men marry now at such a late age is because they are afraid they would not be able to support a wife with many children. If the men knew that by safe and harmless means he could limit his children to the number he wants to have and to a time most convenient, they would marry much earlier and they would marry much oftener; and this would necessarily have a great effect in diminishing the number of bachelors and old maids. This would in its turn have a great effect in diminishing prostitution with its terrible concomitant evil, venereal disease.

2. Every physician knows that too frequent child-birth, too frequent nursing, and the sleepless nights that are required in bringing up a child, exhaust the vitality of thousands of mothers, make them prematurely old or turn them into chronic invalids. The knowledge of prevention would do away with this evil.

3. On account of our vicious laws, which prevent a free discussion of preventives and which make the imparting of knowl-

edge on the subject so difficult, many women use improper and injurious methods of prevention and thereby injure their health or risk their very lives. Were a free discussion of the subject permissible this evil would be done away with.

4. Similarly there are numberless thousands of men who have become pitiable weaklings, pitiable sexual neurasthenics, from coitus interruptus, or from other injurious methods which they practice through ignorance of better and harmless methods of prevention. Universal knowledge of the proper means of contraception would save these men from a deplorable fate.

5. This would be one of the most important points in summing up my case. The evil of abortion is one of the most terrible evils in our society. It kills thousands of unmarried and tens of thousands of married women. If it does not kill, it often infects, maims and weakens for life. The public will never know just exactly how many victims are sacrificed every year to this terrible Moloch. For, to the honor of the medical profession, be it said, that the physician who is called in to treat a girl or woman dying from a criminal abortion, very often at great risk to himself, protects the good name of the poor woman, and does not give on the death certificate the true cause of death. And whenever I hear of a case of a woman dying from an abortion, as I do not infrequently, I blame not the woman—on the contrary, my heart goes out in pity to the poor victim of our brutal laws—but my blood boils with indignation at society or the state, which mercilessly and pitilessly sacrifices every year so many of its mothers. The knowledge of the prevention of conception would do away entirely with the evil of abortion, or would reduce it at least to a minimum. Every investigator has found that wherever means of prevention of conception are most difficult to obtain, there abortions are at their highest. Where preventives are easy to obtain, where their sale is permitted by law, there both abortion and illegitimacy are reduced to a minimum.

6. We know that a good many married men who patronize prostitution do so not on account of wickedness merely, but to a great extent they are driven to it by the fear of impregnating their wives. And what is more—and this is an illuminating commentary on our pitiful social conditions—many wives know it and not only say nothing, but actually encourage their husbands to visit prostitutes, only to leave them alone, such is their terror of another and another and another pregnancy. Only last week I read in a German publication that it is not an infrequent occurrence among the lower classes in Germany for the wife who earns her own money to give a part of it to the husband in order that he may go to other women and leave her alone. What this means in increased risks of venereal disease needs no detailed discussion. A knowledge of the means of prevention would obviate this terrible evil. Not only our sanitarians but our moralists who care more for man's soul than for his body, should from this point of view alone be in favor of prevention.

7. We now come to an extremely important point. The word eugenics is on the lips of everyone, people who know what it means and people who have the most fantastic notions as to the purport of eugenics and what eugenisists stand for. We know perfectly well that there are people whom it is a crime to permit to bring children into the world. About the unquestionably insane, imbeciles, morons, and

perverts, we need not worry in this respect. Society will have to take care of them by sterilizing them or segregating them. But there are people who can very well get married, provided they do not bring children into the world. Among such we may mention people suffering with tuberculosis, epilepsy, perhaps cancer and certain mental abnormalities. We have no right to deprive those people of any affection in their lives. And besides, it would be worse than useless to do so. If you raise the barriers for entering matrimony too high, if you make your requirements for a marriage certificate too rigid, those people will be sure to enter into illicit unions, and this means an enormous increase in prostitution and illegitimacy, two undoubted evils. But teach those people the proper means of prevention of conception and the problem is solved. For of one thing we may be sure, leaving out of consideration the imbeciles, morons and degenerates who could not be taught to use any precautionary measures, and whom, as I said before, society will have to protect itself against in a different way, there are no parents who would deliberately bring children into the world whom they had reason to fear would be tainted with hereditary disease. No sane parents wish to bring into the world handicapped, maimed and deformed children.

What I said just now also applies to thousands of syphilitics. There are thousands of syphilitic men and women who are perfectly safe as far as their partner is concerned, but are not safe enough to become parents. They cannot infect but they must not give birth to children for fear that the children may have the taint in them. The use of preventives settles this problem and saves the world from thousands of pitiable hereditary syphilitics.

Or is it better to permit tainted parents to bring syphilitic, epileptic and insane children into the world than to use preventives? One reverend gentleman who criticised my teachings said that it was. He said it was much better to have the streets full of syphilitic, maimed and defective children than to accept the doctrines of Dr. Robinson.

And in speaking of the subject of hereditary syphilis I cannot refrain from mentioning a case that I saw but three days ago, namely last Friday. It was the young mother's fifth child. The first two children were born dead, the third and fourth died very soon after birth, and at last the distressed and unsophisticated mother was overjoyed at giving birth to a child that lived. The child is a year and a half old now. It would have been better for it and for society if it had been born dead or died soon after birth—much better, of course, if it had never been conceived. For it was one of the most pitiable, one of the most sickening objects that we are called to look upon in our practice. I know of no more pitiable spectacle than a baby suffering with hereditary syphilis. This child was full of sores and ulcers, the lip was eaten away, it had a characteristic syphilitic snuffles, breathing loudly and with great difficulty, in short it was a pitiable sight. The cause of all this misery is the brutal father. The mother has, of course, also become syphilitic.

Now what are you going to do with that couple? Tell them to abstain? Just try to make such a brute abstain. He would simply go to another woman, infecting right and left. The only way you could make him abstain is by locking him up in jail. If you cannot do that, then in the name of decency and common sense teach such

couples, of which there are thousands in our broad land, at least not to bring any more wretched, diseased creatures into the world.

8. Then again there are thousands of women who suffer from diseases which are not hereditary, which are not dangerous in themselves, but become dangerous only when pregnancy occurs. Such are cases of advanced heart or kidney disease, cases of very narrow or deformed pelvis, cases of tendencies to eclampsia or puerperal convulsions. As long as these women do not become pregnant they get along very well. To impregnate them means to aggravate their disease, to hasten their end or actually to drive them to the grave. As I have to tell many a time to some men, to impregnate their wives would be equivalent to murder. The knowledge of the prevention of conception would obviate these potential murders.

I could present many more points for the defense, but I believe even with the points I have presented so far, my opponents would have a very hard case to refute or demolish. I therefore feel perfectly justified in repeating and concluding with my motto, namely that: There is no single measure that would so positively, so immediately, contribute toward the happiness and progress of the human race as teaching the people the proper means of the prevention of conception.

VISCERAL SYPHILIS.*

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IT is not the purpose of this paper to offer anything original on the subject of syphilis, but to emphasize the importance of always considering syphilis as a possible etiological factor in every pathological condition of the internal organs. Since the discovery and general adoption of the Wassermann reaction it has been shown that visceral syphilis is not as rare a condition as was formerly supposed. Until a few years ago only cases of lues were admitted to the dermatological service of the Kings County Hospital which were clinically syphilitic, that is those cases which showed active signs of the disease. Since the general adoption of the Wassermann reaction, however, by all the services of the hospital in cases of doubtful diagnosis, all cases showing a positive Wassermann reaction have been referred to the dermatological service, and it has been my good fortune to study these cases.

Every viscus of the body may be affected by lues. Tertiary lues is responsible for the largest percentage of the lesions of the internal organs, although cases of secondary syphilitic infection are also found in the abdominal and thoracic viscera. In many instances no clinical evidence of syphilis is present. Luetic lesions of the liver and blood vessels are the most frequent to show signs and symptoms of the trouble. The symptoms are often indefinite, simulating those of malaria, tuberculosis or rheumatism. Chills, fever of an intermittent or remittent type, and sweats with loss of weight are the most frequent symptoms.

The temperature is generally the result of a broken down gumma and as these often heal spontaneously when the patient is put to rest they are often not recognized. The presence of a septic temperature with chills and sweat occurring at irregular intervals with periods of

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improvement should always lead one to suspect syphilis. Very little stress should be placed on a negative history as most luetics either deny having had the disease or are ignorant of ever having had it.

It is impossible in the time allotted to me this evening to go into detail, but I shall take up each system separately and attempt to give the essential points as the disease affects each.

The Respiratory System.—Any part of the respiratory system may be affected. The trachea, bronchi, lung tissue and pleura may be attacked separately or all together. There may also be a diffuse mediastinitis. In the trachea we have circumscribed syphiloma, gumma, diffuse syphiloma and particularly ulcers. Syphilitic bronchitis is a frequent complication and may occur in the secondary or tertiary periods. It may be catarrhal, gummatous or sclerogummatous with bronchiectasis. The early effects produced by syphilis in the lung are an intense cell proliferation which fills the alveoli, and infiltrates the septa, peribronchial, subpleural and perivascular tissue. It is generally marked in the alveolar walls causing the epithelium to desquamate. The process may be general or localized. The lung has a peculiar gelatinous appearance and the condition is termed by some syphilitic pneumonia. The next form is an early diffuse sclerosis. The lung is not altered in shape but shows a great increase in connective tissue. Miliary gummata are numerous and there is a great proliferation of elastic tissue. The third form is a dense sclerosis. The lung is often contracted and the pleura is much thickened and often adherent. Finally large gummatous lesions may also sometimes exist.

The symptoms and signs of syphilis of the respiratory tract are not at all characteristic. Usually they consist of cough and dyspnoea with an expectoration free from tubercle bacilli. In syphilis of the lung cough with chills and intermittent fever, profuse expectoration, enlargement of the superficial lymph glands as well as those of the mediastinum are usually found. The physical findings may simulate tuberculosis or bronchiectasis. Weakening of the breath sounds is considered an important sign by Stanley. The process is most frequently found in the middle lobe of the right lung. The following is a brief history of a case of pulmonary syphilis occurring on my service in the Kings County Hospital:—N. H., female, colored, 37 years old, single; admitted to the hospital January 21, 1914. History was negative and syphilis was denied. Present illness began two months before admission as cough, shortness of breath and pain in the right side. The cough was worse at night. The pain and cough has steadily increased and the expectoration is profuse. Patient has lost weight steadily. The sputum is blood tinged, sticky and thick. Night sweats have occurred regularly and the temperature has varied between 100 and 102 every afternoon. Physical examination shows expansion of both lungs diminished, the right more than the left. Tactile fremitus slightly increased over upper right chest both anteriorly and posteriorly. Relative dullness increased over right lung both front and back. Bronchovesicular breathing and fine moist rales over whole right chest. The heart showed faint systolic blow at the apex. Pulmonic second sound accentuated. Liver two fingers below the ribs, smooth and slightly tender. Wassermann reaction positive (++++). Fifteen examinations of the sputum, some of them by the antiformin method, failed to disclose any tubercle bacilli. No spirocheta were found in the sputum. Cultures of the sputum showed the presence of staphylococci, strepto-

cocci and pneumococci. The Von Pirquet reaction was negative. The patient received one injection of salvarsan and mercurial treatment with potassium iodide; and in three weeks time improved sufficiently to be able to leave the hospital.

Syphilis of the Gastro Intestinal Tract. I will simply mention in passing the primary sores, mucous patches and gummata which occur in the mouth and rectum. Ulcers of the œsophagus following gumma or by the extension of ulcerative processes of the pharynx occur with resulting difficulty in swallowing or the formation of strictures from the scar contraction. During the stage of general infection acute gastritis and acute enteritis or gastro-enteritis may occur. I recently had a young man under my care with an acute gastritis accompanying lues.

J. W. developed a chancre in the latter part of August, 1913. With the appearance of his rash in October he had pain in the pit of the stomach and attacks of vomiting. The pain and vomiting increased in severity until he had 3 or 4 attacks of vomiting a day and especially after eating. When he presented himself to me for treatment he still had a fading macular eruption and numerous mucous patches in the mouth. He claimed to have lost 30 pounds, and had slight cough. An examination of the lungs was negative. The heart showed systolic murmur at the apex. The abdomen was tender and the vomitus contained thick stringy mucus. Wassermann reaction was (++++) positive. There was no history of alcoholic excess. Examination of the stools and sputum were negative. This patient was first put on inunctions of mercury and general tonic treatment. As soon as his condition improved enough he was given .6 grms. of salvarsan. The gastric symptoms soon cleared up, the patient gained weight and was able to resume his work. These luetic gastro-intestinal conditions may become subacute and then chronic. In the tertiary stage the most frequent condition is a chronic gastritis which may be due directly to the syphilitic process by the formation of small gummata and partial or complete destruction of the glandular tissue or indirectly due to involvement of the liver, spleen or other organs with an accompanying interference of the circulation. Gastralgia and intermittent vomiting and pain are, as you know, not infrequently due to syphilitic involvement of the nervous system and are early manifestations of tabes. Enteritis with swelling of the lymph follicles and enlargement of the mesenteric glands occurs rarely. Gummata may appear in the mucous membrane of the intestine with resulting ulceration and if they heal leave scar tissue and stricture as a result. Colitis with or without ulceration may occur and is generally chronic. Proctitis is also observed. Gummata of the rectum arise generally in the wall or in the surrounding tissue. They are comparatively frequent and have often been operated upon for cancer. Ulcers of the stomach are not as rare as was formerly supposed. They are probably due to the disintegration of gumma, endarteritis, or infection of mucous patches. Tumors involving the gastric wall are less common than ulcers. They may cause obstruction of the pylorus either by secondary ulceration or through the diffuse infiltration of the walls around the orifice. Myers in tabulating 50 cases of syphilis of the stomach found that 31 were in males. The youngest patient was 18 years old and the oldest 60. The earliest incidence after primary infection was ten months and the latest 25 years. The average of the patients was 45 years. Meyers classifies the lesions of the stomach due to syphilis as follows:

- 1—Ulcers of the stomach in any location and the results which may occur therefrom.
- 2—Gumma in any part of the stomach and its sequelae as a tumor.
- 3—Widespread infiltration of gummatous or more fibrous character leading to deformity, cicatrization or involvement of the peritoneum or neighboring organs.
- 4—A combination of two or more of the above conditions.

While the symptoms of gastric syphilis may be varied and the diagnosis often difficult, the following symptoms are fairly constant. Pain immediately after eating, failure to benefit by the ulcer diet, absence of hematemesis, of occult blood in the stomach contents and feces; emaciation and tenderness.

Liver. Clinical statistics underestimate the frequency of syphilis of the liver. The condition may be either inherited or acquired. In inherited syphilis when the condition appears early it is generally fatal. The process may consist of a diffuse interstitial hepatitis with enlargement of the whole organ. The diffuse hepatitis of the acquired type simulates hypertrophic cirrhosis. The liver is enlarged, smooth and somewhat tender. The symptoms of this condition are moderate jaundice, fever of an intermittent type with chills and sweats. An atrophic cirrhosis with recurrent ascites also occurs. It may be a later stage of the hypertrophic type. Gumma of the liver is the most frequent form of this disease. The gumma may be small or large, single or multiple. They may appear in the hilum and by pressure on portal vessels cause ascites. The symptoms of lues of the liver are pain which may be periodic or continuous. It is generally local and may be mild or severe and colicky in nature. The pain is either nocturnal entirely or becomes exaggerated at night. Pell considers the localization of pain in the left lobe as pathognomonic. Fever may occur and be either remittent or intermittent in character. Chills and sweats generally accompany the fever. Jaundice is less frequent than the other symptoms. It is generally mild and of short duration. Most cases of tertiary syphilis of the liver have existed for a long time, showing only slight gastro-intestinal disturbances before the true symptoms of the condition present themselves.

The physical findings of syphilis of the liver are not constant. The liver, although generally enlarged, may be either normal in size or contracted. It may be irregular in shape and lobulated and a gumma may often be palpated. The left lobe is generally larger than the right. The diagnosis is exceptionally difficult at times. Lues of the liver simulates almost every disease of the organ and particularly carcinoma and gall stones. Whenever the classical symptoms of disease of the liver are unusual syphilis should be considered as a possible cause of the trouble. The following cases are fair examples of syphilis of the liver.

1.—M. M., female, married, forty years old. Admitted to the hospital December 15, 1913. History negative. Denied syphilis. Never drank until two years ago. Since then has had one pint of beer a day and for the past six months has had one-half wineglass of whiskey each day. Patient claimed that she had been losing weight and strength for some time. Her chief complaint was pain in right hypochondrium and vomiting. The pain had existed for about a month, was sharp and continuous night and day. The vomiting was relieved somewhat after patient was put on liquid diet, but the pain

persisted. The vomitus contained thick glairy mucus and was bile stained, but not blood stained. The patient sweated at night and ran a temperature averaging from 99° to 101°. On physical examination the heart showed mitral and tricuspid regurgitation and slight hypertrophy. Lungs, moist rales over the entire chest. Liver was palpated one inch below the costal border, regular in outline and tender on pressure. The entire body was very much jaundiced. The spleen was enlarged and tender. The urine was scanty and the color of blood. The Wassermann reaction was positive (++++). This patient died two weeks after entering the hospital. The autopsy showed the following findings:

Heart enlarged. Mitral and tricuspid valves dilated. Tricuspid valve showed chronic vegetations. Mitral and aortic valves thickened. All valves bile stained. Slight fatty changes in the heart. Atheroma of the aorta. Lungs both congested. Spleen enlarged and congested. The liver was bound down by adhesions and showed a hypertrophic cirrhosis. Common bile duct patent. The stomach showed a hypertrophic gastritis. There was congestion of the small intestines and ulcerative colitis of the large intestines. The kidneys revealed a subacute nephritis with areas of focal necrosis.

Case 2 is of a different type.—A. K. admitted to the hospital January 6, 1914. Patient stated that she had never been ill in her life until two weeks before when she noticed her abdomen begin to enlarge. It increased rapidly in size until on admission it measured forty-four and one-half inches in circumference. History was negative. Lues was denied. Patient drank beer moderately but no whiskey. Wassermann reaction was (+++++) positive. Physical findings: Heart showed forcible apex beat but no murmurs. Accentuation of the pulmonary second sound. Aortic second sound distant and feeble. Lungs: expansion poor and resonance impaired. Abdomen markedly distended, veins prominent. Flatness at seventh rib in both axillary lines. Tympanitic in median line and for about three inches on either side above the umbilicus. Dullness below the umbilicus anteriorly and in both flanks. Conjunctivae yellow. Urine negative except for a trace of bile. On the day after admission patient was tapped and 166 ounces of fluid were withdrawn. The fluid was dark yellow, specific gravity 1,010 and contained no bile. Wassermann reaction of the fluid was doubtful. Three weeks later paracentesis was performed again and 256 ounces of a similar fluid was withdrawn. The Wassermann reaction this time was (++) positive. The patient's blood count showed red cells 3,500,000, white cells 16,000; polymorphs eighty-nine per cent, lymphocytes eleven per cent. Hemoglobin eighty per cent. This patient died a month and a half after admission to the hospital in spite of treatment.

The autopsy findings were, heart: thickening of the mitral valve and cloudy swelling of the myocardium. Lungs and bronchi congested. Red hepatization of the middle and lower lobes of the right lung. Pleura thickened. Spleen septic. Kidneys congested. Liver shows an atrophic cirrhosis. Capsule very much thickened.

Case 3.—A. H., male, thirty-nine years old, single. Consulted me to see if he was cured of his syphilis which he had contracted ten years before. He had had two years regular treatment of pills at the beginning of his trouble. He had been perfectly well until one year ago when he began to have periodic attacks of colicky pains in the right side, worse some little time after eating. At the time of attacks

of pain he would have chills, slight fever and sweats. Occasionally he was slightly jaundiced. Patient had lost weight during the past six months. Examination showed the heart and lungs to be normal. Liver slightly enlarged and felt below the border of the ribs. The border was smooth and slightly tender to the touch. A distinct mass could be felt in the region of the gall bladder. The urine was normal. The Wassermann reaction was (+++++) positive. Under treatment of injections of mercury and iodides the condition was greatly improved and the mass in the region of the gall bladder was materially reduced in size.

Spleen.—The spleen may be enlarged in the early stages of syphilis. This enlargement generally subsides. In the tertiary stage we may find a general enlargement of the spleen with tenderness of the organ. This may be associated with anemia and all the classical symptoms of leukemia. Gummata of the spleen are fairly common and are often the cause of fever. Cicatrices of healed gumma have often been found post mortem. Amyloid degeneration is also found as an accompaniment of amyloid degeneration of the liver. The following case is an example of syphilis of the spleen. C. Y., male, forty years old, contracted syphilis twelve years ago. History negative for tuberculosis.

Had asthma fifteen years ago. Malaria seventeen years ago. Patient's first complaint was weakness and indigestion. In April, 1913, patient had first attack of indigestion with pain after eating and eructations of gas. He recovered from this in two weeks and returned to work. In June he had a more severe attack and had to stop work for six weeks. Since then he has become progressively weaker, but has worked off and on until December when he commenced to have pain in the left side, slight cough and sweats at night. On admission to the hospital examination showed the heart and lungs to be normal. Patient was thin and emaciated. The abdomen was distended. There was a tumor with distinct notches and hard sharp edges in the left hypochondrium. Tumor extends from eighth rib post axillary line to crest of the ilium and out to the nipple line. The mass moves with respiration and is tender on pressure. The liver is felt one finger below the ribs. It is smooth and slightly tender. The pulse varies from 90 to 100. Sputum negative, urine negative. Stools negative for intestinal parasites or ova. Blood parasites not found. The patient ran a remittent temperature. The Wassermann reaction was (+++++) positive. The blood count showed red cells 2,368,000, white cells 428,400. Polymorphs forty-six per cent, large mononeuclears twenty per cent, small mononeuclears four per cent, eosinophiles six per cent and transitionals eight per cent. Myelocytes, neutrophiles eleven per cent. After this patient received an injection of .3 grms. of salvarsan: the red cells increased to 3,970,000 and the white cells dropped to 264,000. This patient continued to improve after the second and third injection of salvarsan, but the subsequent injections have not showed the same effect and the patient has apparently reached the limit of improvement. The spleen and liver are greatly reduced in size, however, and the tenderness is much less than formerly. The patient is up and around, eats well and has no more indigestion. I have another case almost identical with the former case in my private practice.

Syphilis of the Pancreas.—Syphilis of the pancreas, although rare, is occasionally seen. Cases of diabetes mellitus and insipidus due to

syphilis have been reported. One of my patients in the Kings County Hospital with secondary syphilis whose urine was examined previous to an administration of salvarsan, showed the presence of sugar in the urine. The patient showed no other signs of diabetes, although the examination of the urine regularly for a week showed the presence of sugar. Salvarsan was withheld temporarily and mercury administered and the condition quickly cleared up and did not return.

Kidneys.—Affections of the kidneys are fairly common during all stages of syphilis. The majority of cases of syphilitic nephritis occur early, either before the appearance of the eruption or during the stage of the eruption. The condition may appear with sudden œdema and dropsy or it may develop slowly. There is generally a large amount of albumin present, from three to ten per cent. Spirochætes may be found in the urine and the Wassermann reaction is generally positive in the urine. Therolix found the Wassermann reaction positive in all of nine cases when the reaction was applied to the globulin fraction of the urine. While the condition generally develops during the secondary stage it may develop later. When the nephritis develops late the symptoms and urinary findings are those of a chronic parenchymatous or interstitial nephritis. As a rule the course of the later conditions is benign and chronic with pronounced albuminuria and polyuria, but with no change in the circulatory apparatus and but slight increase in the blood pressure. Uremic symptoms occur but seldom and are generally mild. In exceptional cases there may be acute symptoms of hemorrhagic nephritis with uremia. The cases of syphilitic nephritis may get well spontaneously or they may become chronic and develop into what Dieulafoy calls generalized syphilitic amyloidosis.

Circulatory System.—The heart and blood vessels are severely attacked by the syphilitic poison. Lippman in examining a large number of cases post mortem has shown unmistakable evidences of syphilis on cross section. Reuter and others have demonstrated the spirochætes in the lesions. Billings has summarized the effects of syphilis on the vascular system as follows:

1. It may cause a nodular para-arteritis which may involve any of the small arteries of the body, but which affects most frequently the arteries of the circle of Willis.
2. An acute gummatous endarteritis of vessels of medium size and less frequently larger vessels of the brain and also the aorta. In this type perforation of the arterial wall may occur and when it involves the aorta results in sudden death.
3. Obliterative endarteritis involving small blood vessels of the body and especially the coronary arteries. When it affects the coronary arteries the result is often a fibrous myocarditis with resulting insufficiency of the heart. I have seen a number of cases of endarteritis obliterans syphilitica affecting the fingers and toes and simulating in every respect Raynaud's disease.
4. Syphilitic arteritis usually confined to the larger blood vessels and especially to the root of the aorta, showing marked changes in the intima and media. The heart itself may show lesions in the form of verrucous endocarditis or gumma may occur in the heart wall and interfere with the conductivity of the muscular fibers.

While the effects of the syphilitic poison on the blood vessels may take place early in the secondary stages of the disease, it is generally not discovered until the tertiary period. Babcock states that in ex-

aming 175 cases of syphilitic aortitis, the average time between infection and the manifestations of aortic symptoms was from fifteen to twenty years.

While the signs and physical findings of cardiac syphilis are essentially those of cardiac lesions from other causes, there are certain characteristic points which tend to differentiate syphilis from other causes or at least arouse one's suspicion. There is a greater tendency toward involvement of the heart muscle and coronary arteries in syphilis. Dyspnea is an early symptom and is generally out of all proportion to the physical signs. Precordial pain is also an early and common symptom. An absence of any history of articular rheumatism or other acute infection likely to be followed by endocarditis and the hardness of the arteries in general should still further excite suspicion. The average age of the patients with cardiac syphilis is from thirty-five to fifty years and males are more often affected than females.

It can readily be seen that syphilis may affect any organ or tissue of the body and may simulate closely almost any disease. The symptoms are often indefinite and misleading and the condition is probably by no means as rare as was formerly supposed. Many more cases of visceral syphilis are being added to our records daily since the Wassermann reaction is being more generally used.

In conclusion I would advocate a broader and more thorough teaching of syphilis in our medical colleges. I believe that every medical school should establish a chair of syphilography. The head of this department should be a trained syphilographer who should direct the teaching of syphilis in all its branches, with the co-operation and assistance of all the other members of the faculty. In this way the student would be taught syphilis thoroughly from the standpoint not only of the dermatologist and the genitourinary surgeon, but also from the standpoint of the surgeon, the internist, the neurologist, the obstetrician, the pediatricist and the special departments of medicine.

GASTRO-COLOPTOSIS.*

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THIS compound term was coined by Professor Rovsing, of Copenhagen, who in 1897 first devised and reported an operative procedure for the relief of this condition. The term is sufficiently distinctive to be self-explanatory, though hardly sufficiently embracing since patients with gastro-coloptosis have frequently developed some dislocation of other viscera. In studying the etiology of this condition four theories stand out prominently as causative factors in its production; Glenard in his classical article describes the condition so minutely and with such elaboration that it has since borne his name. His studies led him to declare that there was some disease which had to do with nutritional changes in organs, which disease in his opinion seemed to be related to a morbid liver function, a true liver diathesis, and this theory continued to receive credence until Stiller advanced his idea. Stiller contended that it is a congenital, functional, structural weakness which permits laxity of the abdominal support. This in turn causes atony of the supporting structures with congestions and

* Read before the Medical Association of the Greater City of New York and by invitation before the Brooklyn Medical Society.

stasis in organs which, because of their excessive weight and the diminished ability of the supporting structures, conduce toward, or favor, a sagging and dislocation of the organs. Stiller's hypothesis had such an effect on the medical profession that these patients for a long time were considered incurable. They were relegated to the care of the charlatan and condemned to the comforts of the wheeled chair or the hospital bed. Then followed Rovsing, Clark, Lane and Coffey, whose studies have greatly added to our knowledge of this condition and to the benefit of the suffering patient. Rovsing divides his patients into two classes, described by him as the virginal and the maternal type. He ascribes the cause of the virginal ptosis to early corsets and tight lacing, added to habitual constipation. He gives as the cause of the maternal ptosis the laxity of the abdominal wall due to child-bearing added to previously acquired constipation. Sir Arbuthnot Lane holds that posture, constipation and adhesions or kinking of the movable and the immobile parts of the intestines is the cause of this condition. Coffey seems to have harmonized the findings of the other observers, and with his biological, embryological and anatomical studies has brought forth in his illuminating article a cause of morbidity which will with difficulty be refuted. He holds the following factors as of prime importance: *First*: Congenital defect in peritoneal fusion. This defect may be a deficient rotation with a deficient fusion of the ascending and the descending colon to the parietal peritoneum together with a failure of the omental bursa to coalesce with the transverse colon. *Second*: A faulty congenital shape of the abdominal cavity. *Third*: A lack of power in the abdominal wall to keep up intra-abdominal pressure and thereby a failure to hold the abdominal organs on their natural shelf. *Fourth*: Loss of the extraperitoneal fat which helps to keep up intra-abdominal pressure.

These theories apparently account for all the factors engaged in the production of splancnoptosis, but they fail to give us any reasonable measures for the prevention of this condition. At present every woman in five and every man in fifty is of this type, according to several investigators. How may this condition in the growing child be modified before factors are ushered in which make its occurrence inevitable? There are some defects which cannot be remedied. We certainly cannot add shelves to the abdominal wall, but are not shelves a question of posture and proper pressure direction—a resultant rather than a cause? Nor can we force the intestines to rotate or their peritoneal surfaces to coalesce. However, there are some preventative measures that may be of value in prophylaxis. In the application of the abdominal binder to the newly born it would be well to instruct that it should be applied for proper support, and that the ideal binder should be applied as a bandage, starting below the anterior superior spines and going well above the umbilicus. Strict attention should then be paid to constipation in the young until after adolescence is reached, since among these constipated children are found the forerunners of the type which all authors so characteristically describe. The importance of general and abdominal exercises must not be forgotten. Finally the serious part played by corsets and tight lacing must be recognized. These then are the factors which in the study of the etiology enable us to form some definite thought concerning prophylaxis.

The study of the symptomatology of gastro-colo-ptosis is a résumé of the literature of intestinal auto-intoxication with intestinal

stasis. Sir Arbuthnot Lane raises a monument to his memory by his illuminating studies of the symptomatology of this condition. He, in his enthusiasm, attributes to this chronic intestinal stasis a responsibility for chronic arteriosclerosis, chronic nephritis, ulcer of the stomach, gall bladder disease, and, naturally, tuberculosis. Chappelle, quoting Lane, and Coffey, quoting both, states that the study of the life history of fifty patients established the symptoms complained of as:

1. Headaches which were severe and frequent.
2. Attacks of nausea, often followed by retching or actual vomiting. In some cases the vomiting was very frequent and of a severe nature. It was very interesting to note that in several of the cases blood was frequently present in the vomit and had misled very able men to the diagnosis of gastric ulcer, although none was found at the operation.
3. Loss of appetite was almost constantly present.
4. Loss of weight was present in all cases.
5. Markedly cold hands and feet, which gave an indication of defective circulation.
6. Mental apathy. This was very definite in most cases. It was most marked in case thirty, which was well described by her medical attendants as one of torpor. Many felt that death would be a welcome relief from her physical and mental misery and some had actually attempted to bring about that end.
7. Constipation which in all was persistent and which previous treatment had failed to correct. One case had gone twenty-eight days without an action of the bowels in spite of her treatment.
8. Attacks of abdominal distention which were accompanied by discomfort and relieved by eructation, or the passage of flatus, or an action of the bowels.
9. General muscular pains and a loss of freedom in the action of the joints.

The abdomen. Palpation was attended with tenderness over the abnormally fixed areas of the bowels. The main site of obstruction varied in the different patients and, consequently, the position of maximum tenderness varied. The cecum as a rule was a pelvic organ and much dilated. In some cases it was found fixed in the right iliac fossa. The ilio pelvic colon presented two main varieties, in one of which a straight thickened tube was palpable in the right iliac fossa; in the other it was not so easily felt, but at the operation was found as a large distended loop with the ends approximated and fixed by adhesions to the left iliac fossa.

Prof. Rovsing lays great stress upon the cardialgia which always occurs, and occurs immediately upon the patient partaking of food, and is always present to the left of the middle line. In his classification of virginal coloptosis the symptoms complained of are pain occurring immediately after eating and bearing no relation to the kind of food taken, but to the quantity. These patients confine themselves to small meals frequently partaken of because they realize that a heavy meal produces pain. They are so numerous, and the relief of their condition so simple before the kinks and adhesions occur that I emphasize with Rovsing the type of the individual showing this lesion. As to his virginal type, a few years after puberty, and after consti-

pation has grown to be a habit, the gracile body easily conforms to the effects of corsets and tight lacing. The lower thorax is compressed by the corset, the liver, stomach and colon being forced and weighted down by the constipated coils of intestines. These organs find themselves compressed between two forces, that of the compressed lower ribs and narrow thoracic cavity, and that of the tense musculature of the abdominal wall. Between these forces the stomach and colon are frequently enfolded. This virginal type seems to conform to such a deformity that Keith, in 1903, claimed that enteroptosis is the result of a vitiated method of respiration, and that it should be assigned really to a disease of respiration. These patients may keep up a fair general health for some years but gradually increasing constipation, added to the severity of the pain, make them fearful of food and inanition occurs with its train of symptoms. There then occurs a gradual absorption of the preperitoneal fat with a lessening of inter-abdominal pressure, and a further subsidence of the organs. We then have a stasis in the large intestine, with a stasis in the small intestine which stasis is transmitted to the stomach and there is a delay in the emptying of the stomach with a relative atony.

In the maternal class there is a laxity of the abdominal wall through child bearing, thereby lessening the abdominal pressure. The abdominal organs, losing the support of the air-filled intestines, begin to sag, which sagging is further accentuated by the always present, obstinate constipation. The maternal class suffer more from symptoms referable to chronic intestinal stasis than from direct stomach symptoms, because the stomach is not compressed as in the virginal class. Relief in the virginal class frequently follows child bearing, the acute symptoms subsiding with the relaxing of the abdominal wall. Roving lays great stress on the diagnostic value of rest in bed for improving the symptoms of gastro-coloptosis, and cases are reported in which rest in bed relieves the constipation, although this in other diseases is usually increased by such treatment.

In the differential diagnosis of this condition we run the gamut of our diagnostic ability. The constipation must be a positive and chronic factor, relievable by rest in bed, as must most of the stomach symptoms, pain, nausea and vomiting. Left sided pain in virginal ptosis patients must be present, bearing no relation to the time or quality of food taken. Gastric ulcer must be excluded, and hysteria considered as to cause or effect.

Treatment, as has been well said, is causation reversed. Much should be done for these patients before they become surgical post-mortems. An appreciation of the characteristic type makes this class of patient easily diagnosable, and our attention once directed to them we wonder that we overlooked symptoms pointing to the diagnosis. Once we suspect the condition, it can be readily proven. The position of the stomach may be mapped out by percussion and inflation, or by the X-ray examination, the time of the emptying of the viscus being also noted. Test meals do not seem to be of much value because there is no finding which is pathognomonic. We can do much for these patients by dieting, good hygiene, and by medicinal and orthopedic means; proper corsets, abdominal belts or pelottes, or Rose's plaster to the abdomen should improve the symptoms. If the organs can be replaced and held in position, as proven by the X-ray or other means of diagnosis, the symptoms should subside. No patient should be operated on unless medicinal or supportive measures fail.

A word regarding supportive methods. The abdominal belt may be dismissed as of no value; the Rose adhesive plaster is only a temporary aid; the straight front corset is with difficulty worn by the thin virginal female; the abdominal pelotte, or truss, having two elastic bands with attachments for posterior pressure against the lumbar spine answers well in some cases. A corset to be of benefit must be adjusted with the patient on her back, the shoulders depressed, the hips elevated and the abdomen massaged toward the umbilicus. All these measures proving ineffective, the patient has the choice of continuing her present and increasing discomfort, or of submitting to relief by surgery.

The surgeon has a choice of various methods, which choice will depend largely upon his previous experience and the methods of attack to which he is accustomed, and to the problems presented upon the survey of the organs themselves. In simple gastro-colo-ptosis the method of Rovsing appears the most rational. Naturally the originators of the various surgical procedures are most enthusiastic over their individual methods. Rovsing's method of gastroplication is to place three parallel sutures through the anterior surface of the stomach wall, to bring them through the abdominal wall, and to tie them over a glass plate placed upon the outside of the abdomen, thereby holding a broad surface of the stomach wall against a scarified surface of the peritoneal peritum. If the gastrocolic ligament is at all elongated and this fixation of the stomach has not replaced the ptosed colon, Rovsing shortens the gastrocolic ligament by several purse string sutures. Bayea shortens the omentum minus by a series of purse string sutures and reports a number of cases to prove his claims. But in the majority of cases it appears that the gastro-hepatic ligament is so thin and sieve-like that it tears when touched with a forceps, and in those cases it is impossible to shorten by sutures. Coffey uses the Bayea method where practical in addition to his hammock operation. Where we have a mid-line ptosis the Bayea operation will only support the pyloric end, and the middle line of the stomach and transverse colon will not be supported at all. With the ligaments so thinned out as is usually the case, there is no assurance that the shortened ligament will be at all supporting.

The hammock operation of Coffey supports the stomach and colon by suturing the great omentum to the anterior wall, transversely midway between the ensiform and the umbilicus, and he adds the Bayea operation where necessary and practical.

For enlarging the lower thoracic cavity in the virginal patients to accommodate the replaced stomach and liver, both Coffey and Rovsing have proposed procedures. Coffey does it by splitting the rectus facia on either side of the medium line, leaving the recti muscles bare of facia for the greater part of their surface. Rovsing makes a longitudinal cuboidal section of the recti muscles, turning them on themselves and suturing them. This is a very important procedure, for in these cases the depth of the cavity is very shallow, the spine seeming almost to come in contact with the anterior abdominal wall. Where necessary the strength of the abdominal wall may be increased in appropriate cases.

I have purposely refrained from touching upon kinks, pericolic membranes, movable kidneys, giant cecums, or mobile sigmoids, for these all have a certain surgical significance apart from the object of this paper.

PARTIAL MYXEDEMA.*

Report of a Case.

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MILD types of spontaneous hypothyroidism have been recognized since Chantemesse and Marie¹ reported their observations in 1894, and Murray² the following year independently came to the conclusion that such cases did occur as a result of a temporary affection of the thyroid gland. Dock³ states that some observers, as Hertoghe, prefer to class all cases presenting mild symptoms of myxedema, as true myxedema, reserving the term incomplete myxedema for such "processes as adenoids, hypertrophy of the nasal mucosa, painful swelling of the liver, varicose veins," etc. These anomalous conditions have not been generally accepted as instances of hypothyroidism.

The subject of incomplete, or larval, myxedema has been well presented in this country by J. B. Nicholls⁴, who has thoroughly reviewed the literature and graphically described this type of disease, which is so readily overlooked unless the possibility of its occurrence is kept in mind.

The following case presents a fairly typical example of this condition:

Case Report.—Mrs. X., thirty-two years of age, married, born in the United States.

Family History.—Her father and mother are both living, the father having been told that he might drop dead from heart disease, and the mother suffering from gall stones and a fibroid tumor. One brother is living and well. There is no history of thyroid disease or of gout, syphilis, cancer, or tuberculosis in the family.

Previous Medical History.—The patient had measles and whooping cough as a child, and typhoid fever at the age of sixteen. At this time she was confined to bed for six weeks.

The menses began at thirteen, appearing regularly, lasting nine days and being preceded by a good deal of pain. She was married at seventeen and within a year had an abortion produced at the third month. Her cervix was dilated after this and her menses then became less painful and of a three-day type. One year later she had another abortion induced.

History of Present Disease.—The patient had always been constipated. For about five years she had felt the cold severely and the previous summer she had suffered from chilliness even in the hot weather. In October, 1912, she had bled profusely and for a long time after a third induced abortion. At this time, too, she had had a prolonged cold and had suffered somewhat from shortness of breath. She dated her ill health to this period. Since then she had felt very weak and tired easily, and suffered much from headache and backache. At times she complained of vertigo. Her natural tendency to melancholy became aggravated, and she cried a great deal. For many years she had occasionally screamed out in her sleep, and could not be aroused, remembering nothing of it the next day. These attacks had been getting more frequent. Her appetite was good, but she suffered from flatulence and occasional sour eructations. The constipation has been

* Read before the Brooklyn Society of Internal Medicine, March 27, 1914.

noted. She complained of numbness along the course of the left ulna nerve. In January her hair began to come out, and a month later the centre of her eyebrows and her lower eyelashes disappeared.

Examination.—The patient was a pale, rather obese young woman, weighing $150\frac{1}{2}$ pounds, which was her normal maximum weight. The fat was generally distributed, although her abdomen had perhaps more than its share. Beyond a dryness of the skin, there was nothing suggestive of myxedema about the tissues, and the nails were normal. Her eyes showed nothing abnormal, the tongue was clean and tremulous, the teeth in good condition. The hair of the scalp, from the forehead back over a zone of about three inches, had largely disappeared (the frontal band alopecia, of Walsh), leaving a few stray hairs. The centre of the eyebrows were invisible and the lower lashes gone.

The thyroid gland was easily palpated and felt a little large. The lungs were normal, as was the heart, except for an accentuated aortic second sound, the systolic blood pressure being 168 mm. Subsequent readings were twenty to thirty points lower, and it is likely that the first high reading was due to nervousness. The abdomen was well muscled, firm, and a little fat. The urine was normal except for an excess of indican.

The blood showed seventy-eight per cent of hemoglobin (Sahli), 6,192,000 R. B. C., the index being .93, and 6,200 W. B. C. The differential count was as follows: Poly. fifty-two per cent, large mononuclears and transitionals eighteen per cent, lymphocytes twenty-six per cent, eosinophiles two per cent, basophiles two per cent.

Treatment and Course.—On March 19th, she was put on two and a half grains of thyroid extract and a forty-eighth of a grain of arsenic three times a day, and showed immediate improvement in relief from pain and depression, saying she felt "lighter." The feeling of chilliness promptly disappeared and her skin became moist. For the first time in her life she ceased to suffer from cold feet. The bowels moved regularly without any cathartic. Her weight decreased six pounds in the first month, but after that it remained about stationary. The most noticeable loss was in her face and abdomen.

In about two weeks a crop of fine hair appeared. This continued to grow and successive crops made their appearance. In two months her eyebrows and eyelashes looked quite normal.

Early in June she developed a mild attack of appendicitis and on the advice of a surgeon she was not operated upon. The blood picture during this attack showed a leucocytosis of 15,500, with the following differential count; poly. sixty-six per cent, large mononuclears seven per cent, lymphocytes twenty-six per cent, eosinophiles one per cent. Some distress in the right iliac region has persisted, but operation has since been refused.

Shortly after the attack of appendicitis, having again become pregnant, she induced an abortion for the fourth time. She did not bleed excessively.

Thyroid treatment was continued for about six months, the dose of thyroid being gradually reduced. During this period there were occasional evidences of thyroidism, as shown by an increased pulse rate, excessive sweating, diarrhea, and headache, the dose, of course, being temporarily cut down at these times.

A slight relapse occurred in February, 1914, but is again responding satisfactorily to treatment.

The last blood count, taken March 22nd, the patient being under thyroid treatment, showed poly. forty-nine per cent, large mononuclears five and two-thirds per cent, lymphocytes forty-three per cent, eosinophiles two per cent, basophiles, one-third per cent.

The diagnosis was based on the mental and physical depression, the susceptibility to cold, the alopecia and the dry skin, together with the tendency to obesity. Confirmatory evidence was found in the tendency to bleeding, the indigestion and constipation, the vertigo and the nightmares. The enlargement of the thyroid gland was rather unusual, although myxedematous symptoms are not infrequently seen after the subsidence of the acute symptoms in exophthalmic goitre.

The reports on the blood findings in myxedema are very contradictory. All observers agree that a mild anemia is common. This patient showed a polycythemia at first, and, curiously enough, developed a mild anemia while under treatment. Specific treatment usually improves the blood picture. The high color index, noted by some observers as Kraepelin,⁵ was absent. A polynucleosis was frequently noted by LeBreton and a lymphocytosis by Kocher,⁶ while Dock⁷ speaks of a possible increase of the large mononuclear elements. This was also noted by Renario⁸ and once by Kocher. In the present instance this was originally present, but was obscured by a relative polynucleosis during the attack of appendicitis, and finally replaced by an excess of lymphocytes under thyroid treatment, this increase in lymphocytes being a generally recognized effect of thyroid medication.

As to treatment, the method of regulating the dose of thyroid is familiar. Arsenic is frequently recommended as a concomitant. The philosophy of this would appear to be its stimulating effect upon normal anabolism, as a balance to the destructive effects of the thyroid.

The diet in such a case presents some interesting features. The patient was losing about three ounces or 90 Gm. of weight a day. Cushny⁹ estimates that one-sixth of the loss in weight is due to protein destruction, the other five-sixths representing increased fat oxidation and loss of water. Nitrogen equilibrium can be maintained, therefore, only by supplying an excess of protein in the diet, as otherwise the tissue protein will be attacked with disastrous results to the muscular tissue, including the myocardium. In the case under consideration, an excess of fifteen grammes of protein a day over her normal intake was indicated.

The question of prognosis in this case is very interesting. Whether or not she will find it necessary to take thyroid extract at times for the rest of her life remains to be seen. Perhaps, if the abdominal condition, which may well be throwing an extra burden on the thyroid, could be radically cured, it might solve the problem for her.

REFERENCES.

1. Quoted by Nicholls, *J. A. M. A.*, 1909, lii, 1162.
2. Murray, *Twentieth Century Practice of Medicine*, 1895, iv, 696.
3. Dock, *Osler's Modern Medicine*, 1909, vi, 460.
4. Nicholls, *loc. cit.*
5. Kraepelin, *D. Arch. f. Klin. Med.*, xlix, 587.
6. Kocher, *Arch. f. Klin. Chir.*, xcix No. 1, 280.
7. Dock, *loc. cit.*
8. Renario, quoted by Murray.
9. Cushny, *Pharmacology and Therapeutics*, 1906, 711.



EDITORIAL



MEMORIAL ADDRESS.

Medical Society of the County of Kings, May 31, 1914.

A GAIN we, in the mystery of life, are brought face to face with the mystery of death. Again we meet in the home of our society to render homage to the achievements and pay tribute to the memory of those who have fallen (on the firing line) while valiantly battling for humanity's sake. By their departure, we have been bereft of precious comrades whose very association had been an inspiration, as side by side we fought the battles against the common enemy—Death. Not only had they the gems of intellect but they refined them. But yesterday their voices resounded on this forum in questions of debate with a sincerity and eloquence that captivated us on topics pertaining to the betterment and happiness of mankind.

By their absence, the community has lost promoters of civilization, able teachers of public hygiene and ameliorators of pain and sorrow.

For having lived, their relatives and friends have been made the happier; and with less fear they will walk down into the dark valley of the shadow when summoned by the mystic trumpeter.

Never, until all things have been revealed, will we know of their boundless charity. Neither greed nor creed inspired them. Theirs was a charity as wide as the sky; and wherever there was human suffering, the sympathetic response from them bent above it as the firmament bends above the earth.

This Society loved them living; we love them still.

J. RICHARD KEVIN.

ANTI-VACCINATION.

THE Anti-Vaccination League of America, through its Treasurer, Mr. Charles M. Higgins, an eminent manufacturer of writing inks and adhesives, continues to bombard the public with reasons why we should not be vaccinated. Three full columns with the imposing title "Exposing Vaccination Falsehoods and Spanking the Continental Lie" have recently appeared in a daily newspaper in Mr. Higgins' best serio-comic style. Mr. Higgins is a humorist of sorts, a little ponderous perhaps, but thoroughly delightful. Statistics are evidently meat and drink to him and he revels in them, at least in those that he can array against vaccination, as an eel does in mud. Did Mr. Higgins ever hear the statement that all statisticians are liars? As a matter of fact it is perfectly possible, by a judicious emphasis on the one

side helped out by partiality and the refusal to include adverse statistics on the other, to prove by figures almost anything that we wish to prove. If it be assumed that the Anti-Vaccination League is not a collection of narrow-minded bigots but is honestly striving for a humanitarian purpose, it would be interesting to know what that purpose is. The world is full of iconoclasts, enthusiastic, if misguided, who seek only to destroy. Will Mr. Higgins and his friends tell us what they propose to do? How do they propose to replace any good effects of vaccination when they have succeeded in doing away with it? What explanation do they offer for the practical disappearance of smallpox from America? How do they explain the established fact that a large part of the continental army during the Revolutionary War suffered from smallpox, that city after city was devastated by it, that people fled in terror from their homes at the sight of the yellow flag and that one hundred years later smallpox is so rare that many of the present generation of physicians have never seen a case? The attention of Mr. Higgins in particular and of the public in general, is most earnestly invited to an article entitled "Vaccine and Anti-Vaccine" by Dr. J. Frank Schamberg, published in Volume VII, page 392 of this JOURNAL. It deals with facts that have apparently escaped the attention of the opponents of vaccination. Mr. Higgins and his friends today live in safety, their children may go about as they will, free from the dread that constantly hung over this land three generations since. But they, forsooth, must strive tooth and nail to uproot and throw aside the one factor which has been introduced since colonial times—vaccination. If Mr. Higgins and his friends will bend their energies toward, and spend their seemingly abundant means upon something better than vaccination, something that will not scar or disfigure and which will be equally efficacious, if they will emulate the example of those who have founded institutions for the study of cancer and tuberculosis and kindred scourges, they will at least show that they are anxious for the betterment of mankind. Their present attitude is foolish in that they seek to destroy without suggesting something better; they should not forget that the man who really benefits his race is he who makes two blades of grass grow where but one grew before. Let them be helpful and not reactionary.

H. G. W.

THE DOCTORS' PSALM.

THE teacher of false ethics is our master; we know only want. He maketh us serve the dispensary gratis; he leadeth us likewise into other fields of free service.

He thinketh not of our interests; he leadeth us in paths of sacrifice for his vanity's sake.

Yea, though we ask for the economic products of our labor, we receive only titles; for thou art with us; thy retainers they impress and flatter us.

Thou preparest a dinner before us in the presence of said retainers; we are crowned as altruists; but the cost of living proceedeth apace.

Surely hardship and hypocrisy shall follow us all the days of our lives, if we continue to give something for nothing forever.

A. C. JACOBSON.

A NEW LEGAL REQUIREMENT.

THE attention of the profession is particularly called to the requirements of Chapter 363 of the Laws of the State of New York, which is an act to amend the public health law in relation to the sale of habit-forming drugs. On and after July 1st, the orders for heroin, morphine, codeine, etc., must be accompanied by an official order blank as specified in the law. These may be obtained by application to the Secretary of the State Board of Health at Albany, who will supply them on request. In order to avoid possible embarrassment, physicians are urged to comply with these requirements of the law and obtain a supply of such blanks as soon as possible.

H. G. W.





Obituaries



DEPARTMENT UNDER THE CHARGE OF WILLIAM SCHROEDER, M.D.

EUGENE FREDERICK PEARCE, M.D.

DR. PEARCE was born in Brooklyn, N. Y., September 12, 1858, where he died, April 30, 1914.

He was the son of Frederick Pearce, of England, and Margretta Keane, of Ireland.

Educated at Adelphi Academy and the New York University, where he received the degree of A.B. in 1881. His medical education was under the direction of George H. Atkinson, M.D., and completed at the Long Island College Hospital, receiving the degree of M.D., in the class of 1883.

During the years 1883-84 he was interne at the Long Island Hospital, after which he entered upon private practice in this city. He was a member of The Medical Society, County of Kings, from 1889; Anthon Lodge, F. A. M.; Montauk Lodge, No. 114, I. O. O. F.; Long Island Council, R. A., and Primrose Lodge, Sons of St. George.

Dr. Pearce was married February 3, 1896, to Emily S. Lyons, of New Jersey. Three children have been born—Frederick K., Edna S., and Harry L. Pearce.

W. S., Sr.

ANNIE M. BROWN, M.D.

DR. BROWN was born in Middletown, N. Y., in 1842, and died in Brooklyn, N. Y., April 30, 1914.

She was the widow of the late Benjamin J. Brown and a graduate of the Woman's Medical College of New York in the class of 1880; a member of the Medical Society, County of Kings, from 1881-1904.

W. S., Sr.

DANIEL MORRIS WOOLLEY, M.D.

DR. WOOLLEY was born in Deal Beach, N. J., in 1850, and died in Brooklyn, N. Y., May 18, 1914. His early education was received at Dickinson College, his medical education at the New York University Medical College, where he was graduated in 1885. He was a member of the Medical Society, County of Kings, from 1885-1898. Dr. Woolley is survived by his widow, Henrietta, and three sons, J. Addison Woolley, M.D., Richard H. and Daniel Morris Woolley, Jr.

W. S., Sr.

JULIUS CAESAR LAUER, M.D.

DR. LAUER was born in Germany in 1858, and died at Astoria, L. I., April 21, 1914. He received his medical education at the University of Berlin, where he was graduated in 1893. His widow, Ernestine, and five children survive him.

W. S., Sr.

PATRICK J. McKEOWN, M.D.

DR. McKEOWN was born in Ireland in 1861, and died in Long Island City, May 3, 1914. He was a graduate of Bellevue Hospital Medical College in the class of 1890. For a number of years he was Health Officer of Long Island City and physician to St. John's Hospital; a member of the Associated Physicians of Long Island from 1905-1911. He leaves a widow and one son.

W. S., Sr.

CHARLES F. LAUER, M.D.

DR. LAUER was born in Pittsburg, Pa., in 1840, and died in Brooklyn, N. Y., April 9, 1914. He was a graduate of the New York Homœopathic Medical College in 1863. Dr. Lauer served as a surgeon in the Civil War, and began the practice of medicine in this city in 1880. He was a member of the County and State Homœopathic Medical Society. He leaves a widow and two children.

W. S., Sr.

ADOLPH ABRAHAM MARGOLIES, M.D.

DR. MARGOLIES died April 20, 1914. He practiced medicine for a number of years in the City of New York, and about eight years ago removed to Borough Park. He was a graduate of the University of Koenigsburg in 1879. He is survived by his widow and six children.

W. S., Sr.

LEWIS HODGE CLAPP, M.D.

DR. CLAPP was born in Fairport, N. Y., in 1881, and died at Lakewood, N. J., May 17, 1914. He was a graduate of the New York Homœopathic Medical College in 1904, and practiced medicine in this city. He is survived by his two children, Beatrice M. and Catherine L. Clapp.

W. S., Sr.

HUBERT NICHOLS, M.D.

DR. NICHOLS was born in New York, May 18, 1864, and died in Brooklyn, N. Y., March 9, 1914. He was the son of Truman Nichols, M.D. He was graduated from Bellevue Hospital Medical College in 1891 and practiced medicine in this city. He leaves a widow, Ada, and a daughter, Mildred Nichols.

W. S., Sr.

HIRAM E. TURNER, M.D.

DR. TURNER was born in New York in 1854 and died in Brooklyn, N. Y., March 8, 1914. He was graduated from the Long Island College Hospital in the class of 1874, and practiced medicine in this city. He leaves a widow, Elizabeth W. Ashwell, and a son, Victor F. Turner.

W. S., Sr.

DANIEL SIMMONS, M.D.

DR. SIMMONS was born in Port Elizabeth, N. J., October 23, 1843, and died in Brooklyn, N. Y., March 18, 1914. He was a graduate of the New York Homœopathic Medical College in 1871, a member of the County and State Homœopathic Societies, the American Institute of Homœopathy, Physician to the Cumberland Street Hospital. He was for a number of years chairman of the Memorial Committee of the G. A. R., and President of the Homœopathic Medical Society, County of Kings, in 1900.

W. S., Sr.



Society Transactions



Continuation

TRANSACTIONS OF THE BROOKLYN SURGICAL SOCIETY.

Regular Meeting of the Society, December 4, 1913.

Simple Fracture of the Humerus, Treated With a Lane Plate.

Presented by W. L. Duffield, M.D.

C. J. P., a man of about thirty-five years, sustained a simple transverse fracture of the left humerus at the junction of the lower and middle thirds on June 6, 1913.

Several efforts with and without anæsthesia had been made to reduce and maintain reduction of the fragments, and all manner of dressings had been applied to overcome the deformity, but after each manipulation the X-ray showed the fragments in the original position, with the lower fragments displaced anteriorly and the fragments not in contact.

His physician had urged operation, which was persistently declined.

On June 15th he was referred to the writer by his physician, who was going away for a month's vacation. On June 16th, under gas anæsthesia, there was no difficulty in reducing the fracture which was done readily and several times, but it was impossible to maintain. The moment pressure was removed the fragments would slip out of place.

After much urging, consent to operate was obtained, and on June 18th, through a vertical incision made in the triceps, the fragments were easily brought into apposition and plated, after first removing a piece of œdematous periosteum about one and one-half inches long and one-half inch wide which had intervened between the fragments, and made it impossible to maintain reduction. He obtained firm union and a perfectly useful arm.

Compound Fracture of Right Femur. Lane Plate.

Presented by W. L. Duffield, M.D.

J. O., Italian, thirty-five years old, sustained a compound fracture of the shaft of the right femur, about its middle, and was immediately brought to St. John's Hospital, on September 6, 1913.

Appropriate dressings were applied to the wounds and an extension of twenty-six pounds applied, in spite of which overriding of the fragments could not be corrected.

On September 23d, the wounds having healed, the small fragments shown on the plate was removed and the bone ends brought into apposition and plated.

He was discharged on November 22d with firm union, though with a somewhat stiff knee.

Double Pregnant Uterus Complicated by Pyosalpingitis and Appendicitis.

Presented by W. L. Duffield, M.D.

Miss D. M., colored, twenty years old, was admitted to St. John's Hospital, on November 27, 1913, complaining of severe pain and tenderness in right lower abdomen, accompanied by nausea and vomiting. This abdominal pain had persisted for two weeks and became much more severe on the day of admission. The pain has remained constantly in one place.

The remainder of the history of the case is vague and unreliable, as the patient told conflicting stories. She at first denied ever having been pregnant, and subsequently admitted having been delivered, at full term, two years ago at the Brooklyn Hospital.

She acknowledge having consulted a physician for menstrual trouble, but denied any instrumental interference. She stated that menstruation had always been regular and normal, and that the last period occurred the early part of November. During some of her menstrual periods has had colicky

pains in ovarian regions, but not of late. Her family history has no bearing on the condition for which she applied for treatment. Upon admission her temperature was $99\frac{2}{5}$; pulse, 100, white cells, 22,000, and polymorphs, 92 per cent.

Physical examination negative, except for abdomen and pelvis. The abdomen was moderately rigid and distended with marked tenderness in hypogastric and right inguinal regions. In the left portion of the umbilical region there was apparently a soft tumor, extending almost to the umbilicus, but this could not be definitely determined due to the rigidity.

A pelvic examination revealed a badly lacerated perineum, rectocele, cystocele and a cervix which was lacerated in several directions and was a mass of hard scar tissue. The uterus was slightly enlarged with the fundus behind the symphysis and a little to the right. To the right, and posterior to the uterus, was a firm, tender mass which was fixed, and extending upward and somewhat to the left was an indistinct soft mass which resembled to the touch an ovarian cyst not well distended.

A diagnosis of incomplete abortion was made and it was decided to curette and make a further examination under anæsthesia.

The curettment caused considerable bleeding, and removed quite a quantity of tissue which could not, however, be identified as placental. The curette entered the uterus slightly to the right, and unless care was used would engaged in a seemingly recent laceration on the right side of the cervical canal, extending up into the broad ligament. The curette could not be made to follow a course in the median line nor to the left.

The second examination, made under anæsthesia, confirmed the above findings, and the abdomen was opened believing that a pyosalpinx existed, with the possibility in mind of finding either an ectopic pregnancy or an ovarian cyst with a twisted pedicle.

Upon opening the abdomen dense adhesions were encountered on the right side. The omentum was adherent to the fundus of the bladder and when this was separated the right tube and appendix were found firmly adherent and inflamed, and a coil of intestine was also adherent to the right tube. While separating this intestinal adhesion the intestine was opened, but the opening which was small was immediately closed with a purse string suture. The right tube and ovary and appendix were all removed, and the stumps buried as far as possible. The tube was full of thick creamy pus.

Attention was now turned to the left pelvis, and here a mass feeling like an ovarian cyst and looking like a pregnant uterus was discovered. Upon delivery through the abdominal wound it was found to be a uterus with one tube and ovary attached to its left superior angle, and entirely separate from the right uterus which was firmly fixed in the pelvis. A supravaginal hysterectomy of the left uterus was done without difficulty, and the cervical stump buried. Cigarette drains were introduced and the abdominal wound closed down to the drainage.

The patient is making a satisfactory recovery.

There was but one cervix seen during the curettage, but it is possible that a small cervical canal might have escaped notice in the mass of scar tissue, particularly as no search was made for one. It was, however, impossible to introduce the curette into the left uterus through the cervix which was dilated and curetted, for the effort was made to introduce the curette more to the left, but this failed. From within the abdomen the cervix of the left uterus seemed entirely distinct and separate from the right uterus.

It is the writer's opinion that the patient had been pregnant in the right uterus, had been aborted and the cervical canal lacerated into the broad ligament, and that the pus tube had resulted from or was secondary to the abortion.

The specimen presented, consisting of the left uterus, ovary and tube with contained fetus, was much larger at time of removal. Following the operation a clamp was introduced into the cervix, allowing the escape of liquor amnii, and then the cervix was incised enough to allow the escape of the fetus to the extent shown.

This uterus was not removed because it was pregnant, but because we could not assure ourselves that it was pregnant, and not the seat of a submucous fibroid.

The Action of Hydroxyl on Bacteria.

Reported by J. Sherman Wight, M.D.

DR. HENRY A. HIGLEY, in opening the discussion, said:—"I am very glad to say a word or two regarding the infective end of the matter, so to speak. When a man hears a paper like that, from the bacteriological side, it is a

dazzle to him, because in the first place it very largely seems against all our preconceived ideas.

"It is very evident here that the doctor is dealing with a very great polyvalent agent in that he gets results against streptococcus, staphylococcus and the tubercle bacillus. Thinking on the line of Ehrlich's theory: that, of course, is a dazzler. The antibodies, according to that theory, are supposed to be specific. Here we have an agent which is supposed to, and undoubtedly does, from these cases, bring forth antibodies against a large number of bacteria. Now, the only question, as a starter, is whether there is any just basis for any such thought as that, whether it is legitimate and logical and worthy of further thought, whether anybody else has ever thought of it and worked on that line.

"In the first place, as I understand the doctor's idea, his claim is that the introduction of this hydroxyl stimulates the total leukocyte count, raising it in every case, and raising the percentage of polymorphonuclears, or if it does not raise the polymorphonuclears it raises the total count so the actual number of polynuclears at work are greatly increased per cubic millimeter, and that by increasing the total leukocyte count and the number of polys, there is a large number of antibodies brought into action which are protective. Now, is there any legitimate thought for that? Is that a reasonable supposition in view of what we know? We only have to go back two or three years to find two very eminent men, one of whom is now unfortunately dead, working on the same line in a different way, one man, Professor Hiss, of Columbia University, and the other man, Zinsler, of Leland-Stanford University in California. They endeavored to do, and did do this same thing, but in another way. They started with the assumption that the leukocytes were the basis of the protective bodies; that is, they contain the protective bodies, and that when a man had an infection of any kind the thing to do was to throw into him a large number of leukocytes; and they took rabbits and produced leukocytal extract, and inoculated it into infected animals and human beings, particularly with pneumonia, etc. The end of that work isn't yet. They have gotten very good results, particularly in animal experimentation, and also, to some extent, in clinical work. That, to my mind, shows that while this thing, if you just look at it superficially, is possibly a non-feasible affair, still if the doctor, as he is undoubtedly doing with his hydroxyl, is producing a sufficient leukocytosis to increase the normal protective bodies, then he is doing exactly what these people are trying to do with their leukocytal extract. That is as far as I care to go into the matter at the present time."

DR. JAMES WATT, in discussion, said:—"About eleven months ago I was consulted by the patient shown here to-night, with the alveolar carcinoma of the breast.

"She has had the tumor for a number of years and had been under the care of several surgeons. About five years ago she consulted Dr. Coley, and was injected with his fluid. No improvement followed these injections, and operation was advised and refused. After this she drifted from one to another in the hopes of finding relief. For a period of about a year, prior to my first visit, she had applied ordinary household dressings.

"When I first saw her there was a large area of superficial tissue destruction, extending from the third rib down to the abdomen, and from the median line to the anterior axillary line. Most of the mammary gland was destroyed. There was no axillary glandular enlargement palpable. Cachexia was marked.

"I considered the case inoperable, and knowing Dr. Wight had something new in the treatment of cases of this character, I asked him to see the patient. He injected her once in my presence. After that I did not see her until about a week ago, when the condition was the same as has been demonstrated here this evening. To me the result is perfectly remarkable."

DR. RUSSELL S. FOWLER, in discussion, said:—"Has this case been treated by the X-ray at all?"

DR. SHERMAN WIGHT, in answer to Dr. Fowler's question, said:—"Yes."

DR. SHERMAN WIGHT, in closing the discussion, said:—"The substance that I am using, I claim, and as I have already stated, is the hydroxylion, that is, the radical OH, oxygen and hydrogen in a dissociated state. It is separate. It isn't in chemical combination. It is separated and acts as I said, as a separate molecule, and it is known to have a negative charge. How that is done? I have done it by utilizing various substances. Carbolic acid can be utilized or sodium hydrate.

"The method of administration has been either to use it direct in a 4 per cent solution of sodium hydrate or to inject an animal, and then use the serum of the animal. That method I have discarded. I am still working on other methods, and I believe I will be able to get it in a concentrated form so as to be much more readily handled. That is what it is."

Medical Society of the County of Kings

MONTHLY BULLETIN TO MEMBERS

JUNE, 1914

MINUTES OF STATED MEETING, JUNE 16, 1914.

The President, Dr. J. Richard Kevin, in the chair. There were about 275 present. The meeting was called to order at 8.30 P.M., and the minutes of the previous meeting were read and approved.

Report of Council.

The Council reported favorably upon the following applications for membership:

Edward T. Gibson, 168 Montague St.; P. & S., N. Y., 1877; proposed by E. E. Wilson; seconded by P. C. Jameson; May, 1914.

Richard F. Seidensticker, 129 Lafayette Ave.; Yale, 1911; proposed by E. H. Fiske; seconded by Membership Committee; April, 1914.

Joseph Zicarelli, 1377 Herkimer St.; L. I. C. H., 1909; proposed by J. H. Andrew; seconded by C. D. Kevin; March, 1914.

Election of Members.

The following, duly proposed and accepted by the Council, were declared elected to active membership:

Richard S. Pearce, 830 Quincy St.; N. Y. Homeop., 1902; proposed by C. P. Frischbier; seconded by W. A. Sherwood; April, 1914.

Mary E. Potter, 290 DeKalb Ave.; N. Y. Med. Coll., 1899; proposed by J. H. Schall; seconded by F. B. Pierson; April, 1914.

Francis M. Rochford, 113 Quincy St.; L. I. C. H., 1903; proposed by E. H. Bartley; seconded by Membership Committee; April, 1914.

John F. Southmayd, 380 Union St.; P. & S., N. Y., 1892; proposed by J. J. Sheehy; seconded by B. Harris; February, 1914.

Applications for Membership.

Applications for membership were received from the following:

James L. Armstrong, 45 Hampton Pl.; N. Y. Univ., 1897; proposed by C. D. Kevin; seconded by Membership Committee; June, 1914.

Thomas J. Cleary, 369 First St.; Georgetown Univ., 1908; proposed by C. D. Kevin; seconded by Membership Committee; June, 1914.

Maurice Enright, 903 Greene Ave.; P. & S., N. Y., 1885; proposed by C. D. Kevin; seconded by Membership Committee; June, 1914.

Willis M. Gardner, 491 Greene Ave., L. I. C. H., 1908; proposed by T. E. Clark; seconded by C. D. Kevin; June, 1914.

Robert F. McGinness, 1324 Jefferson Ave.; Baltimore, 1898; proposed by C. D. Kevin; seconded by Membership Committee; June, 1914.

Louis C. Menger, 565 Halsey St.; L. I. C. H., 1910; proposed by C. D. Kevin; seconded by Membership Committee; June, 1914.

Ambrose A. Scouler, 755 Macon St.; P. & S. N. Y., 1896; proposed by C. D. Kevin; seconded by Membership Committee; June, 1914.

Robert M. Ullrich, 28 Stuyvesant Ave.; L. I. C. H., 1904; proposed by C. D. Kevin; seconded by Membership Committee; June, 1914.

Clarence E. Winter, 321 Bainbridge St.; L. I. C. H., 1901; proposed by C. D. Kevin; seconded by Membership Committee; June, 1914.

For Reinstatement (Former Members).

James H. B. Dowd, 4201 Ft. Hamilton Pkwy.; L. I. C. H., 1900; proposed by J. R. Kevin; seconded by C. D. Kevin; June, 1914.

Scientific Program.

Symposium on Tuberculosis.

1. "Diagnosis of Tuberculosis of the Upper Respiratory Tract."

By H. Arrowsmith, M.D.

2. "Practical Demonstration for Early Pulmonary Tuberculosis."

By S. Adolphus Knopf, M.D., of Manhattan.

3. "X-ray Diagnosis of Tuberculous Lesions."

By John G. Williams, M.D.

4. "Diagnosis and Treatment of Genito-Urinary Tuberculous Lesions."

By Nathaniel P. Rathbun, M.D.

5. "Tuberculous Lesions of Articulations."

By Walter Truslow, M.D.

6. "Other Surgical Tuberculous Lesions."

By Thomas B. Spence, M.D.

Discussed by Drs. Louis Ager, Benjamin S. Antonowsky, J. Bion Bogart and Burton Harris.

Meeting adjourned at 10.45 P.M.

BURTON HARRIS,
Secretary.

LONG ISLAND MEDICAL JOURNAL

VOL. VIII.

AUGUST, 1914

No. 8

MINUTES OF THE JUNE MEETING OF THE ASSOCIATED PHYSICIANS OF LONG ISLAND.

THE Forty-ninth Regular Meeting of the Associated Physicians of Long Island was held at Avery's "Five Mile Look," Blue Point, Saturday, June 6, 1914. A special train took one hundred and twenty-five guests and members from Brooklyn, and this number was steadily increased at the various stops on the way down. Those from towns beyond Blue Point and those who came by automobile swelled the total number to one hundred and seventy-five. The scientific session was started immediately upon arrival, and much interest was shown in the papers read by Dr. James V. May, of the New York State Hospital Commission, and Dr. A. J. Rosanoff, of the medical staff of the New York State Hospital at Kings Park. Doctor May's paper was entitled "The Physical Basis of Crime," and Doctor Rosanoff's "The Social Possibilities of Mental Hygiene."

Enough faithful members to constitute a quorum remained for the business session. Reading the minutes of the previous meeting was dispensed with, as they had been published in the JOURNAL. Dr. A. M. Judd, chairman, presented the report of the Membership Committee as follows:

Proposed by JOHN F. RANKEN.

Roy Upham, 300 McDonough St.; N. Y. Hom. and Flower Hospital, 1891.

Herbert S. Du Cret, 169 New York Ave.; N. Y. Hom. and Flower Hospital, 1912.

Chester A. Peake, 210 Rutland Rd.; N. Y. Hom. and Flower Hospital, 1911.

Edwin R. Bedford, 352 Hancock St.; N. Y. Hom. and Flower Hospital, 1894.

Ralph I. Yeaton, 1171 Forty-fifth St.; N. Y. Hom. and Flower Hospital, 1909.

Charles A. Brown, 155 Halsey St.; N. Y. Hom. and Flower Hospital, 1905.

William H. Abbott, 1242 Pacific St.; Hahnemann, Philadelphia, 1911.

Percy L. De Nyse, 681 Hancock St.; N. Y. Hom., 1909.

Reuben T. Johnston, 615 Eastern Parkway, Bos. Univ. and Sch. Med., 1903.

Alfred Bornmann, 438 Greene Ave.; N. Y. Hom. and Flower Hospital, 1903.

George H. Iler, 169 Hancock St.; N. Y. Hom., 1890.

George S. Ogden, 641 East Twenty-eighth St.; Hahnemann, Philadelphia, 1898.

William H. Freeman, 263 Arlington Ave.; Chicigo Hom., 1900.

Proposed by GEORGE C. STRAUB.

Patrick J. Murray, 478 Classon Ave.; Bellevue, New York, 1895.

Proposed by WILLIAM F. BOZENHARDT.

E. Arthur Gaudet, 781 Forest Ave.; Queens, Can., 1905.

Proposed by WARREN L. DUFFIELD.

William J. McAveney, 134 Second Pl.; L. I. C. H., 1898.

Proposed by WILLIAM LINDER.

William Engel, 378 Bergen St.; L. I. C. H., 1909.

Proposed by FRANCIS E. BRENNAN.

Theodore A. Lehmann, 227 Tenth Ave., Long Island City; Berlin, 1893; P. and S., 1895.

Proposed by WILLIAM B. BRINSMADE.

Luther Fiske Warren, 161 Henry St.; Univ. Mich., 1909.

Proposed by S. MEREDITH STRONG.

Alvarez H. Smith, 382 Carlton Ave.; N. Y. U., 1890.

Proposed by RAYMOND P. SULLIVAN.

Thomas J. Cleary, 369 First St.; Univ. Georgetown, 1908.

Proposed by ALBERT M. JUDD.

Walter J. Campbell, 384 Union St.; L. I. C. H., 1899.

A. L. Louria, 122 Bainbridge St.; P. and S., New York, 1913.

Samuel G. Blum, 685 Bushwick Ave.; Cornell, 1909.

Milton G. Wasch, 960 St. Johns Pl.; Cornell, 1905.

B. E. Wolfert, 86 Prospect Park West, Johns Hopkins, 1906.

Richard F. Seidensticher, 129 Lafayette Ave.; Yale, 1911.

S. Lloyd Fisher, 2911 Clarendon Rd.; Jefferson, 1907.

Benjamin S. Antonowsky, 423 Miller Ave.; Univ. Missouri, 1905.

Arthur L. Carroll, 188 Adelphi St.; L. I. C. H., 1907.

A motion of Dr. Charles Eastmond that the president appoint a committee of three to discuss the question of increasing the annual dues and to report at the October meeting was seconded and carried. Dr. Frank Overton, chairman of the "Committee on Insurance," reported that the committee had the question of possible insurance in the society under discussion and that a fuller report would be made at a subsequent meeting. The following motion was made by Dr. R. L. Dickinson and, after being duly seconded, was carried: That there be appointed by the president a Hospital Efficiency Committee, with a representation from each of the hospitals of Long Island, the members from the County of Kings being members of the Clinic Committee of the medical society of that county as far as practicable and that this committee report at the January meeting for 1915.

Notice having been given by Dr. Samuel Hendrickson at the January meeting, 1914, that he would move to amend Article V, Sec. 2, of the by-laws, that the treasurer would be added to the ex-officio members of the Publication Committee, it was moved, seconded and carried that such change be made. There being no further business to be transacted for the time, the meeting was adjourned subject to the call of the chair.

Full advantage was taken of the most attractive and favorable environment for the enjoyment of various sports, including boating, bathing, quoits, baseball, and particularly exciting duck on the rock, the more violent exercises making probable a quiet Sunday for most of the participants and upon the parts of the bathers and sailors a demand

for cold cream and other soothing lotions. During the dinner, which was attended by one hundred and sixty-six guests and members,



PHOTO BY WILLIAM C. WOOLSEY, M.D.

addresses were made by Dr. William Browning on "Humanics," Dr. Peter Scott on "Hilarotherapy," and Dr. Henry G. Webster on "Homi-



PHOTO BY WILLIAM C. WOOLSEY, M.D.

letics." Our special train left promptly at 8.30 and landed us at our various homes in good season after a most successful meeting and enjoyable outing.

JAMES COLE HANCOCK, *Secretary.*



PHOTO BY FRANK OVERTON, M.D.

A SYMPOSIUM ON EUGENICS.*

THE EUGENIST'S STANDPOINT.

(Illustrated with lantern slides.)

Arthur E. Hamilton, M.A.

Director of the Extension Department of the Eugenics Record Office, Cold Spring Harbor, and Secretary of the Second International Eugenics Congress, New York City.

I THINK that a word of explanation is in order regarding the work that I have been called upon to do in bringing before those who are interested in eugenics the results of scientific research. Experts in the different fields of biology are, as a rule, far too busy to boil down, sugar off and present their results in a form palatable to those who have not had scientific training and to whom tabloid summaries of special work mean nothing until related to things with which they are already familiar. My work, then, is to gather up related material and endeavor to fit it into the apperception of the people who call for my small services. I am, in a sense, a symptom of what will undoubtedly grow to be a large factor in our educational system, namely the movement that is already well under way to place within reach of "the people" all that may be found practically useful or of genuine human interest in the results of scientific investigation in the realm of genetics. Mrs. Huntington Wilson, in making possible my work with the Eugenics Record Office, has anticipated some of the aims of the American Genetic Association, of Washington, whose educational committee is laying plans for systematic work to be begun in the near future. I can hardly bring anything new to such a body of specialists as I find before me this evening; let me then present you a sample of my work that you may see what manner of presentation I have thus far found effective. The problem of mental defect and its relation to heredity has been before the public in the press of late, and a sketch of the few principles that I endeavor to present in lecture form regarding this question will serve my purpose well.

At a discussion of a short talk that I was requested to give the Twentieth Century Club, in Boston, several of "The Old Guard," as certain of the intellectual nestors who sit up stairs after dinner and subject their luncheon victim to a sort of mild form of the third degree, are called, objected to presenting the people in general things supposedly scientific until we should be "sure of our ground." Especially opposed to talking Mendelism were some of these sages, who seemed to fear that "the people" might suffer a psychic mutation and jump to the conclusion that because garden peas appeared in certain well defined ratios, that human characters were inherited in like fashion. They would not have one suggest that mental defect, for instance, may be found to behave as a Mendelian recessive, as our several hundred pedigrees seem to indicate that it does. They would have us wait until we could dole out laws of heredity in algebraic form, correct to the last fraction of a Pearsonian coefficient of correlation. However, it is not the object of educational work in eugenics to present the very few facts alone which we know something quite thoroughly about, but to set before those interested the main lines of research work, and the main suggestions that have thus far come from it, biological and sociological; the problem of the feeble-minded is related to both, and it is from both sides that I endeavor to lead my hearers to view it.

* Presented before the Medical Society of the County of Kings, April 24, 1914.

Certainly one can not corrupt the intelligence of the laity by telling them that a large percentage, perhaps as high as seventy-five or eighty of mental defect is hereditary, that is, that it "runs in the family." The work of Dugdale, Jorger, Estabrook, Danielson, Davenport, Von Lundborg, Goddard, Miss Kite and a score of field workers have proved this beyond reasonable doubt. That is the first point I try to make clear by illustrations from actual findings in the field, charted in symbolic, pedigree form.

A common question is, "What causes feeble-mindedness?" To say that the condition is hereditary does not answer this question, and I do not pretend to answer it. That there may be a lack of a determiner for normal nervous functioning in the original germ-plasm from which the defectives grow, that blastophoria caused by alcoholism may account for very much of it, that defective functioning, or atrophy, or entire atrophy of the thyroid and other important glands may play a large role, that environmental conditions resulting in faulty nutrition in prenatal life is also a determining factor, and that there may be a hundred contributing sub-causes in the hereditary section alone, is granted; but that the principal cause can be summed up in the phrase "bad stock" is growing more and more to be the conviction of those best fitted to know.

The next most common question is, "If it is bad stock, how can we be rid of it?" and in answer I have a lantern slide showing various proposals, made by biologists, sociologists and fanatics, that we may select therefrom those means that best square with the social ethics of today. Certainly euthanasia is not to be thought of seriously as a possible present day measure. Restrictive marriage laws we see to be about as effective as legislation prohibiting the multiplication of the San Jose Scale. Neo-malthusianism in the hands of morons and imbeciles would probably prove equally valuable. The advocates of laissez-faire have their own answer in history and in the conditions which perhaps none of them have brought themselves close to. Sterilization has its advantages and counteracting disadvantages and is still in a pioneer and experimental stage. Segregation for at least the reproductive period remains, and there are few people who, brought face to face with what has actually been done, and with the possibilities for doing still more in the way of institutional and especially in colonial care for our withered human branch, continue to oppose such measures for cutting down our constantly increasing supply of the socially and racially unfit.

People like to see types of those we would segregate. I have a number on slides ranging from low grade idiocy to high grade morons, attractive or repulsive at sight, but all alike children, and amenable to treatment as children. I find contrasts valuable. I present typical defectives in a graded scale showing how attractiveness and unattractiveness of physique are to be found from the bottom up. It is hard for some of my hearers to believe that a very pretty girl, an inmate of one of our most noted training schools, is feeble-minded. Were they to see her waiting on the table at the institution they would have further doubts. Few judges in our local courts could be found to commit her for mental defect, and yet the results of years of observation are checked up by tests in the psychological laboratory, showing her mind to have stopped growing at about the twelve year level, and there it will in all probability remain.

After a preliminary shiver, as though I had taken a toad or a snake from my pocket, most people will listen interestedly to descriptions of the mongolian type, with large crevassed tongue, slanting eyes, blond or reddish hair, small protruding ears, stubby fingers and toes, usual good temper and happy disposition (when in a sympathetic environment, such as our institutions furnish, at least). They also prove unaverse to pictures of cretins, and a superficial mention of the effects of thyroid feeding on their mentality and physique is enough to set many a young college man to reading about the Valley of Aosta, Balzac's "The Country Doctor," and even the results of the research work at Vineland.

Then, people like to know how our defectives are quartered, what they do, what they are taught, how much they *can* be taught, how long they should be segregated, and, above all—are they happy? It makes one wish that every college class, at least, could be taken through such a place as, for instance, the Rome Custodial Asylum, for part of their education. To see those thirteen hundred children, for they are all children, no matter what their chronological age, in an atmosphere of wholesome labor, to watch them for a day, from sunrise to sunset will dissipate any ideas of "taking away the right to liberty and the pursuit of happiness" that may be lodged in the minds of those who oppose segregation for our mentally below par. Sluggish, clumsy cretins, mongols of varying shades of effectiveness, microcephalics that could earn small fortunes exhibiting themselves at a circus, macrocephalics able to do little more than the most menial of tasks, hydrocephalics, paralytics, imbeciles, morons and a few cases of harmless insanity sprinkled here and there—all DOING something! All but the completely paralyzed are taught to work and to enjoy working. If it is merely the pushing of a polisher a few inches across the floor and back, work is done and as one goes up the scale of intelligence, a definite atmosphere of self-respect and productiveness is encountered that cannot but be wholesome. The right to liberty within a wide range, wider in most cases than home conditions would allow, the right to all the happiness that a pleasant home, regular and "square" meals, labor enough to tire the system sufficiently so that it will rest in sleep during the night, and kindly treatment by a host of nurses and attendants—all this is theirs. The one thing that the segregational system denies them is the privilege of multiplying their kind. Here the regulations are iron-clad, and exceptions are rare to this rule. Sometimes the watchfulness of the guardians is evaded, but on the whole the population is only fed from the large number without the walls.

The colony system interests the people that I meet in my work. That the thousands of acres of State land that now lie idle, the vast tracts of marsh land, rocky hill-land and abandoned farms could be made to blossom again into productiveness by simply harnessing a huge human force that lies now worse than idle because undirected, and that at the same time a great burden could be lifted from the shoulders of the community, is a new idea to most of the men and women I have had the privilege of talking to. And yet it has been *done*. I deal very little in theory and as much as possible in fact. The Templeton Colony in Massachusetts and the colony near the Vineland Training School, in New Jersey, have already demonstrated the efficacy of the "colonization plan." Doctor Bernstein's farm colonies in connection with the Rome Custodial Asylum point in the same direction. There are some 22,000 mental defectives at large in New York State.

Perhaps a third of this number are idle, worthless and even vicious men whose energies might be harnessed, who might be made self-sustaining if placed at colony labor, under hygienic and decently human conditions. Whether counties, cities or State should handle this problem is not for any one person to determine, and I tell my hearers that it is up to them, as voters, to help find a solution and a way.

The feeble-minded girl, whose menace to the community is obvious, is perhaps a more important factor in this section of sociological eugenics. That attention should be given to her first, that when we note a girl of this kind approaching the reproductive period we should do all possible to have her set apart where she may be as happy as she can be made when denied the liberty to run loose and bear imbecile children, is obvious enough after attention is called to the biological and social side of her life and being. This is my work, to call attention to these things that most people have thought but little about.

I have given you but a fragment from the program of educational eugenics which is being planned. To speak on eugenics from a sociological standpoint makes it necessary to isolate a small section and let it illustrate, as best it may, the whole. At the coming Second International Congress on Eugenics, to be held in the American Museum of Natural History, New York, September 23-28, 1915, it is hoped that eugenics will be presented as a possible science that will make for human progress by throwing light on the problems of heredity. We shall try to keep eugenics on a biological foundation, whatever its social ramifications may be. The storm of criticism and cynical fun making is bound to blow over and perhaps it will have been an actual help to eugenics in the end. Every progressive movement is burdened with parasitic cranks, and some of those who have played and posed as eugenicists have well deserved the invective that has come from press and pulpit and lecture room. Every educational plan and scheme that is worth incorporating into our historic system is bettered and purified by criticism, and I, for one, welcome it all, from pseudo-scientific monographs to the sometimes clever cartoons that sprinkle the pages of *Life*. These things keep the mental soil broken and are prophylactic against that setting or atrophy of mind that we are warned against by William James.

Criticism as well as suggestion and contribution from physicians is most welcome to those who are endeavoring to discover the laws of inheritance in man. The Eugenics Record Office aims to prove a clearing house for hereditary data. Its equipment is at the service of the student of heredity. Its family record blanks are free to those who care to fill them out, and its Extension Department is at the service of all who would take advantage of its small store of knowledge concerning what has been and is being done in the field of eugenics.

May I add, in conclusion, that perhaps the greatest difficulty I find in getting en rapport with an average audience of interested people is that I am supposed to have up my sleeve a panacea for all the ills to which flesh is heir. The eugenicist is not supposed to have any place in his scheme of race-improvement as a whole for love, sociology, Socialism, Montessori methods, psychology, psychoanalysis, medicine, hygiene, boy-scouts or radium. That the eugenicist, or student of human heredity and its relation to social progress, should regard eugenics as only one of the many factors that count for racial welfare seems strange in this day of multiple progressive movements claiming

almost a corner on the true, the beautiful and the good, or the plan by which the unity of this blessed trinity can be realized. When I throw a lecture-session open to discussion I find folk wanting to know: "What about environment? Isn't phrenology a coming factor? Do you believe in baby shows? Are there maternal impressions? Shall we make divorce easier?" Are not these questions symptomatic of a rather nebulous conception of the limitations of eugenics, coming, as they do *after* one has spent an hour trying to set bounds to Galton's idea? When I am asked by college students what the B and A (Binet, I suppose) test is, whether we have a colony of mental defectives at Coldspring Harbor to experiment upon, and what our charges are for finding matrimonial mates for the unmarried, I am persuaded that my work it not all in vain. For there are definite truths with which to replace false conceptions; definite facts are coming to light, thought concerning which may lead to a genuine illumination of conduct, and this, if I understand it aright, is the aim of true education: to present such facts and let their suggestiveness lead to conduct-illuminating thought.

EUGENICS: VIEWPOINT OF THE STATE OF NEW YORK.

Robert W. Hebbard,

Secretary, State Board of Charities, Ex-Commissioner of Public Charities,
New York City.

AS the hour is late, and Manhattan, where I live, is far away, I will be brief. I will seek to emulate the example of a curate of whom I once heard. It appears that when a parishioner, a small farmer, had been heard to say that he preferred the sermons of the curate to those of the rector, and the rector's wife, hearing of this statement and meeting him one day, said, "John, I understand you say that you prefer the sermons of the curate to those of the rector, my husband. How do you explain that?" "Well," said he, "ma'am, it's like this: when the curate say 'In conclusion,' he do conclude, but when the rector say 'Lastly,' he do last."

It seems to me very much like carrying coals to Newcastle, to come here tonight to talk to the members of the Kings County Medical Society about feeble-mindedness. I do not at all mean that you have had any more experience in dealing with that class than the physicians over in Manhattan or the Bronx, but I mean to intimate that physicians generally have experience in their practice with this particular class and from a scientific standpoint. As you can well understand from this lecture of Dr. Schlapp's tonight, you understand the situation very much better than I possibly can understand it.

The State Board of Charities has had an interest in this question for nearly fifty years. For almost all that period it has had supervision over the institutions in this state which seek to care for the feeble-minded, the state institutions, the local institutions of charity, such as the almshouses, and the private institutions, of which there are three or four in the state, that seek to care for this unfortunate class.

The present situation, from the Board's standpoint, is an unfortunate one. We have in this state, perhaps, 30,000 idiotic, imbecilic and feeble-minded people, who are so low down in the scale that their relatives admitted to the census-takers that their children and their

friends were in this class. Most of the relatives, of course, seek to conceal that fact; so that when the census shows the admission of that number, you can be pretty sure that the figures are conservative. And yet we have provision for the care of not more than 6,000 in the state today. Now, the reason for that is expressed in just one word, the word "Economy"; and sometimes when I think of that word in connection with the service in this state, I think that the state ought to take the word "Excelsior" from its shield, a word which means "higher and ever higher," and substitute for it the word "Economy."

Now part of this number is due to the very lax methods that have prevailed for years at Ellis Island. The late Commissioner of Immigration, Mr. Williams, now Commissioner of Water Supply, Gas and Electricity, did a great deal to stimulate the United States Government to the point of adding to the force of examiners at Ellis Island. He accomplished some results, but those results were exceedingly meagre as compared with the need. We need at Ellis Island a larger and a better force in order to prevent the influx of feeble-minded persons from across the seas, and then we need a better and a larger knowledge on the part of our local poor law officers who have to deal with families with feeble-minded characteristics who come into this state from other states. Such officers should be able to detect the fact that these new comers are feeble-minded and should bring them to the attention of the State Board of Charities so that when they become public dependents they may be returned to the states whence they came. That would help us to overcome this vast volume of feeble-mindedness that we have in the State of New York. As a matter of fact, our people do not appreciate the importance of this subject. They know what insanity means; they know its dangers, but they do not know, they do not appreciate the dangers connected with the increase in the number of the feeble-minded.

Some years ago the late Dr. Letchworth, who was President of the State Board of Charities, was informed that a certain patient had been returned from the Utica State Hospital, where he had been sent as acutely insane, to one of the county almshouses. At that time it was the custom for the county to pay quite a large rate, a much larger rate than the per capita cost at the almshouse, for the care of patients in the State Hospital; so, for reasons of economy, when the patient was thought to have recovered he was returned to the almshouse for care, and this man had charge of a number of men working about the place. He was very successful, but Dr. Letchworth, whose duty it was to visit the almshouse, suspected that he was not yet cured and when he next visited the institution he said, "John, I understand that you have come back from the asylum" (we called it the asylum in those days), and John said, "Yes, I'm better." "You have charge of these men here, haven't you?" "Yes." "You get a good deal of work out of them, don't you?" "I do." "How is that?" "They have got to work." "Well, what would you do if they would not work?" "I would strike them." "You wouldn't injure them, would you?" "I would." "You wouldn't kill them, would you?" "I would if the 'voice' told me to." "You are soon going back home to your wife and children, aren't you? You love them, don't you?" "I want to go home." "Well, you wouldn't injure them, would you?" "I would if the 'voice' told me to."

Of course, people understand the subtle dangers of the insane as illustrated by this story. They understand there is a "voice" that

is telling them what to do and that is the reason why they often do the terrible things the "voice" tells them to do. Feeble-minded people are regarded differently.

I recall that some years ago I heard the story of a butcher boy who visited the Syracuse State Institution and when he had entered the gate he saw an idiot with an axe. The boy was afraid and stepped back, whereupon the idiot stepped toward him. The boy ran and the idiot ran after him with the axe. The boy ran around the building a few times, being pursued by the idiot, and finally, becoming exhausted, he fell down and the idiot, coming up to him, tapped him on the shoulder and said, "Tag, you're it." But although these feeble-minded people do not have the kind of "voice" that the insane have talking to them, they do have "voices" talking to them. They have the vicious men and the vicious women of the state telling them what to do, telling them how to rob people, telling them how to set fire to buildings and all those kind of things, and they carry out that kind of instruction and they are a serious danger to the community.

Not long ago a committee of the Board visited one of the state institutions for the care of the mentally defective and while there the superintendent of the institution brought out fifty young boys and said, "I don't think these boys are feeble-minded. I do not think they ought to be here. I think they should be in orphan asylums"; and the chairman of the committee, who was a very sympathetic man, came to a meeting of the Board filled with that subject and felt that something should be done at once to prevent the continuance of that condition. "Well," I said, "let us see. Let us investigate the history of these children. Let us find out something about their heredity"; and so we sent an experienced examiner, one who was instructed at the laboratory at Cold Spring Harbor under Dr. Davenport, all about the state looking up the history of those children and out of those fifty there was but one that didn't show clearly a history of feeble-minded inheritance. There was hardly one who had not already been cared for in an orphan asylum where it was found impossible to restrain the child and it was found necessary to send the child to this institution. Now that superintendent is a superintendent who has not got very much faith in the theory of heredity, but, as it worked out in these cases, it proved itself and that is the real danger, the danger that a child who does not seem even to the superintendent of an institution of this sort to be feeble-minded will be turned loose upon the community simply to propagate his kind. In the case of one child there was a doubt and we looked into that still further. This child, it appeared, had a peculiar tendency. It said in the record that he was very fond of seeing blood and that he would not eat anything but the rarest meat, and the record went on to say that he had a desire to throw stones at widows and old women. I was a little surprised at that and I asked how he knew that they were "widows" and so we went back and found that the typewriter had left out the letter "n"; it was "windows" and not "widows."

We need in the State of New York a better knowledge of the needs of the state in this direction and I don't know of any body of citizens that can better spread that knowledge than the physicians of this state. It is something they ought to take a deep interest in because it affects the families of the state and affects the people of the state. We want more money to extend the facilities of the institutions.

We want better examinations made of those who seek to come here, whether from over the seas or from other states, and we want, above all things, a better spread of knowledge throughout the entire community as to the dangers of allowing this class to go without being segregated, and we want also a better understanding of the fact that it is the highest economy to care for them in this way.

EUGENICS: THE RELIGIOUS STANDPOINT.

Rev. John L. Belford,

Brooklyn-New York.

IT is not necessary to declare that my point of view is not medical. Yet, medicine and theology are close friends, if they are not near relations. The M.D. and the D.D. are natural allies. They work together and each aids and helps the other.

So far as the Church is concerned, there is nothing new in Eugenics. More than two thousand years before the Christian era she declared, "The sins of parents are visited upon their children to the third and fourth generation." When she speaks of sins she means not merely the things that have moral guilt, but defects physical and mental which are often consequences of moral guilt. She teaches that all evil is due to sin. The Creator is too wise to make mistakes and too good to produce anything but goodness. The best plans of men are often spoiled by the fool and the criminal. The best systems that man can devise are ruined by the human factor. The best system of safety our railroads have ever installed depends upon the attention and the action of some man who must press a certain button at a certain moment to obtain results. His failure to do his part brings disaster and ruin not merely upon him, but upon hundreds who depended upon him. The disaster is due not to the man who contrived the system nor to the company that installed it, but to the man who has refused or forgotten to perform his duty. So the defects in human nature, with which you gentlemen are so familiar, are due not to any defect on the part of the Creator, but to what may be called the bungling of men who refuse to obey the laws of nature and the laws which we call the laws of God. It does not take a believer in revelation to admit that a good tree bears good fruit and an evil tree, evil fruit. It is axiomatic that men do not gather figs off thorns or grapes off thistles. The principle of casuality holds in things moral as well as physical. Moral turpitude, like mental and physical weakness, as a rule, comes from some defect in a more or less remote ancestor. The exact point of departure from the law or from the normal may escape the eye of the student. Indeed, it may be too minute for even the microscope, but it exists and its growth can be traced. Underlying all sin and all disease there is a violation of law. A priest lives among the poor, the sick and the wretched. From an experience of some twenty-six years let me tell you a few facts.

For some years I had charge of a small parish out on Long Island. I met there a very charming and very excellent doctor. He was not a member of my church, but we were very good friends. He had lived in that town for many years and he knew all about every resident. In talking with him about the number of people who were sent from that town to the insane asylum, I inquired if he

could explain it. He told me it was due to the intermarriage of near relatives. In some cases the result was insanity or feeble-mindedness in whole families.

Now, from the very beginning our Church has forbidden the marriage of relatives and that law exists today and it is enforced as far as possible. There are cases in which exceptions are permitted for grave reasons, but the general law forbids near cousins to marry. The reason for that law is moral as well as physical. When people know that marriage is out of the question, they are not likely to become attached to an ineligible person. Then, we know the mental and physical deterioration which are almost certain to result from such unions. Another law of the Church requires the publication of the banns of marriage. That is, in the parish of the groom as well as the bride, on at least three Sundays before the day set for the marriage, at the parochial mass, notice is given of the approaching marriage and all persons are warned that if they know any reason why this marriage should not take place they are bound in conscience to make it known.

Now, many people criticise us for doing this, but they are short-sighted. They do not see why we do it. We want to know that the contracting parties have a legal and a moral right to marry. A man who has engaged to marry another, or worse, who is already bound in wedlock, has no legal right to marry. A man who has done some crime which may at the time be hidden, or who has contracted some disease which shall be nameless, or in whose family there is some taint which is likely to infect his wife or his children, has no moral right to marry and it is the duty of the Church to save the innocent and prevent the spread of disease.

You have no idea of how many prospective marriages are prevented by this publication and the resulting information.

Then, the parties to the marriage are supposed to be known to their pastor. In large parishes there are some people whom we do not know, but in the ordinary parish we know all our people, and where we do not know all about them, we try to find out enough to satisfy ourselves that the marriage is not a mistake. If there are physical or moral, or even economic reasons against the marriage, we call attention to them and urge due consideration. Of course, there are people who will not listen to reason. No one can convince the fool, but in most cases the warning and advice bear excellent results. If, however, they insist upon the marriage, we cannot refuse to officiate unless there is some serious impediment. Most women are fools on the subject of marriage. If they care for a man and he looks all right, it is very hard to convince them that marriage is not merely a mistake but a crime. Yet, it is possible and profitable to have a heart to heart talk with them and to open their eyes to the dreadful consequences of an inconsiderate marriage. Few women can resist the picture which may be drawn of disease and poverty and perhaps insanity when she knows that he who draws it is absolutely honest and disinterested. Personally, I have prevented many such marriages by the methods I have indicated.

As to the proposed law of sterilization, the Catholic Church has not made any official pronouncement. The matter has been discussed and each side has its champions. We believe that any notable mutilations is immoral, yet we must bear in mind the fact that this law deals with persons who are not normal, and who are a menace to the

community. It does seem that the state, which has the right to kill certain criminals, must have the right to inflict the lesser penalty of mutilation on others. It does seem to be the right and the duty of the state to take every reasonable step to prevent deterioration of the race and the crime and sorrow and poverty that follow in the train of these poor wrecks of humanity. The question is this—Have habitual criminals, defectives and degenerates the right to propagate? Being abnormal and destitute of reason or responsibility or both, some of our best theologians declare that, as things are now, in certain cases, vasectomy is entirely lawful.

The question is largely medical. The Church wants the medical men to thresh it out. She believes *pars est propter totum*—the individual must yield to the community. She is doing, and in all ages has done, her best to promote the good of society. To this end her clergy are striving might and main to prevent what you would call undesirable marriages. We try to teach, to lead, to convince. We cannot command. We try to control, we cannot compel.

As to the proposal to require a certificate of fitness from those who would marry, there is much discussion. Personally, I do not know enough to discuss it. In some places where the law exists it is deeply resented and badly enforced. The result is illegal relations which flood the community with fatherless children and promote the very evils against which the law contends. The Church, therefore, looks, and the state looks, to the medical profession and to serious-minded organizations like yours thoroughly to discuss these matters and to present them to the legislature in such a form that they may inspire wise and equitable regulation.

DR. ROBERT L. DICKINSON, in discussion, said:—"We hear occasionally that this talk about Eugenics is all imagination, impractical palaver of the dreamer. Such addresses as we have heard tonight and the interest manifested by such an audience as is here present are sufficient answer to such statements.

"It is admitted that we are yet in the beginning of such study. In our first speaker we have had a representative of one of the men who have done most perhaps to bring the matter before the public.

"It came to me with no little surprise, to hear a group of young girls, as at a recent Easter house-party in the country, with the greatest frankness and that wonderful simplicity of women, that clean, pure-mindedness with which the woman approaches questions of maternity and marriage, discuss these questions. Whether they are taught them in their classes or not they will read books bearing on them and the intelligent woman of today, the young woman, is going to outstrip us grayheads in the matter, whether we will or no.

"We used to try to produce effects by scaring young people. 'There be few,' says Sir Thomas Browne, 'that be scared into heaven.' It is not, it seems to me, the fear of syphilis and gonorrhea to which we should appeal, but the stirring up of the idealism in the young and there is no fear that we cannot stir up an enormous amount of interest by starting with idealism in the young.

"One of the best eugenic institutions I have seen is a high school in this community that has no like anywhere in the world. Every one of us ought to visit that school. I refer to Washington Irving High School in New York. The girls there are having the emphasis placed on the things that count in everyday life, and not on Greek and Latin and algebra. There is a competition as to whose baby and whose girl shall be brought to be washed and dressed before the class. Those girls are being prepared for motherhood; for home-making. They go into the department store in the school, buy the outfit for the five-room flat in the school, hang the papers on the walls, furnish the home completely and invite their friends.

"It was not so long ago that the last thing to do was to tell a man that he had consumption. We now have public opinion behind us and the courage of our convictions. We tell the consumptive and save the community. We are beginning to acquire this courage in the matter of gonorrhea and syphilis. In

one of our best families a young girl (contemplating marriage) is our patient. The man, yes, we know he has had syphilis. Shall we tell the family? Or the man is our patient and he has had some incurable and uncured disease. Shall we tell the girl's family? What is the use of quibbling about it? We have got to gain the courage to speak the right word at the right moment.

"I believe in certificated marriages. I believe the state or nation should take up this question now. In a recent number of the *A. M. A. Journal* a strong article brought together the law on the question of the regulation of marriages, and showed it to be a very difficult matter. Prohibition begets illegitimacy. Only in education and high standards can we be saved, and no one can help more than the doctor."

MR. A. E. HAMILTON, M.A., of the Eugenics Record Office, Cold Spring Harbor, in closing the discussion, said:—"The former Commissioner's remarks in regard to the relation of the people to the problem of feeble-mindedness lead me to suggest that, as there is to be a special session of the State Legislature beginning May 10th, at which bills may be presented for the appropriation of funds for such state institutions for defectives as the Letchworth Village, the Rome Asylum, the Syracuse School, etc., it might be well for such an assemblage as this to take some definite action. Our state institutions are all overcrowded, there are long waiting lists of defectives whose parents or guardians wish them cared for and more room is needed for their accommodation. May I suggest that, if it be in order, a resolution be passed, authorizing the proper parties to take this matter in hand and use their influence to bring the question before those in power to further the work of segregation of our socially unfit classes either in institutions or colonies."

HEREDITARY SYPHILIS IN CHILDREN: ITS RECOGNITION.*

Hereditary Syphilis: Its Cutaneous Evidences.

James MacFarlane Winfield, M.D.,

Brooklyn-New York.

IF both the man and the woman are profoundly syphilitic, in the active secondary stage, impregnation under this condition generally terminates in abortion, the skin of the fœtus showing evidences of the luetic infection in the shape of macerated shreds and the remains of bullæ.

Should both the father and mother be the victims of syphilis at a more remote stage, the pregnancy may go to term, or miscarriage take place at the seventh or eighth month. The skin of the child will be the site of a papulo-bullous eruption.

If the disease of the parents be still more remote, or if the father alone be luetic, the child is born at term, but the skin is either yellow, wrinkled or there may be a beginning polymorphous eruption consisting of papules over the body and bullæ of the palms and soles; or the child may appear perfectly normal, developing the characteristic cutaneous lesions any time from the fifth day to the third month.

The majority of cases, seventy-seven per cent, show the eruption during the first month, diminishing in frequency up to the third month.

In some instances the first evidence of the cutaneous eruption is the formation of bullæ on the hands and soles. Often a premonitory evidence is a peculiar dusky violet hue of the skin covering these locations; this color may be observed at birth and is pathognomonic of subsequent luetic bullæ: coincident with the blisters, a more or less generalized eruption appears over the body, con-

* A Symposium presented before the Brooklyn Pediatric Society, March 25, 1914.

sisting of macules and papules, which later may develop into moist papules, scaly eczematous-like patches, or furuncles. In many respects the polymorphous eruption resembles that of acquired syphilis. The size of the lesions ranges from a lenticular spot to some a centimeter in diameter. The moist papules are found about the buttocks, in the ano-genital region, the axillæ, the interdigital spaces and face, although, in severe cases, the whole cutaneous surface may be covered with the moist patches; the color of the patch is a dusky-red or violaceous, and there is puriform sticky secretion. The moist papules about the anus and genitals, or in places where there is considerable heat and moisture, often develop into condylomata.

Fissures develop about the commissures of the lip, and in other parts of the body, as for instance, between the toes and fingers; the fissure is deeply indurated, and if the child survives, lasting scars may remain. The vesicular syphiloderm is the rarest type of eruption seen in inherited lues, and when it does occur it is most frequently seen about the lips appearing as conical blisters which rupture, leaving an incrustated patch, the base of which is of the same characteristic violaceous hue that is so common in inherited syphilis.

The more closely the eruption adheres to the vesiculo-bullous type the more fatal the disease, such children seldom, if ever, surviving in spite of the most energetic treatment.

The condylomata may persist long after the other cutaneous evidences of the disease have subsided, and even after the child has gained in weight.

The nails and hair generally are affected in the same degree as is the skin, the unguinal and periunguinal inflammation often leading to complete loss of the nails.

The effect of syphilis may be observed in the hair at birth; there may be complete alopecia or marked thinness, or the luetic infant may have an unusually thick crop of hair, the so-called "syphilitic mop or wig." This abundant crop soon falls out. The hair is particularly liable to fall off from the sides and back of the scalp, the process continuing until there is relatively complete alopecia.

The late cutaneous evidences of inherited lues are similar to those seen when the disease has been acquired later in life, consisting of gummatous infiltrations and cutaneous ulcerations.

These are the more important symptoms and evidences, but there being so many papers in this symposium, and the time for each being limited, there is no opportunity for elaboration. In concluding allow me to call attention to some points in differential diagnosis.

If the exanthemata, particularly measles, are excluded the only skin diseases that are likely to be mistaken for syphilis are the so-called pemphigus neonatorum, simple erythema, impetigo and seborrheic dermatitis.

In arriving at a correct differential diagnosis several cardinal points must be remembered.

First, the age of the child.—Syphilitic eruptions appear before the fourth month of life; if an eruption develops after that time it is certain to be of non-syphilitic origin.

Second.—The color of the eruption; that of syphilis is dusky red, coppery or violaceous. Non-luetic rashes are bright red—erythematous.

Third.—In the vast majority of cases the cutaneous manifestation is preceded by, or accompanies a coryza, and the cry has a peculiar characteristic sound.

Fourth.—It is in most instances possible to obtain some evidence or history of syphilis on the part of the parents.

Fifth.—Most important of all, the Wassermann test. If there is any doubt regarding what the skin eruption is, it is the duty of the physician to aid his diagnosis serologically. If the infant is syphilitic the Wassermann will be positive.

Sixth.—If the secretion from the exudating patches is examined the spirochæte will be found if the eruption is luetic.

Pemphigus neonatorum, impetigo contagiosa, is a disease of pyogenic origin, and close questioning will elicit the fact that some other member of the family who has come in contact with the baby had either a whitlow or impetigo.

In making a diagnosis between bullous syphilis and pemphigus neonatorum it should be remembered that the bullous syphiloderma is accompanied by an eruption of a dark red violaceous color, while the blister of pemphigus is bright red, tense and filled with a clear fluid which becomes cloudy from the invasion of pus organisms.

Syphilitic blebs as a rule first appear on the palms, soles and about the buttocks; those of pemphigus may be anywhere, but seldom on the palms and practically never on the soles. Antiseptic treatment will cure pemphigus, but has no effect upon the syphilitic lesion, the disease progressing until the infant wastes away, unless constitutional treatment is instituted.

Simple erythema is bright red in color and occurs about the convex surfaces of the buttocks, the inner and posterior parts of the thighs and genitals, spreading to the calves, heels, shoulders and elbows. In fact simple erythema may be present at any point where there is friction from the clothing.

With simple erythema there is no other eruption suggestive of syphilis, and the bright red erythematous patch tends to vary in intensity from day to day. If the child is badly nourished and its personal hygiene has been neglected, these simple erythematous patches may become papulo-ulcerative, closely resembling the moist papule of syphilis; here again the color of the eruption must be considered, as well as its location. The general appearance and history of the child are suggestive and if the diagnosis is still in doubt a Wassermann test of the blood or bacteriological examinations of the discharges can be made for the spirochæte, pus organisms and the colon bacillus.

Impetiginous eczema, in contra-distinction from erythema, occurs particularly in the flexures, as well as the area that is covered with a napkin; the diseased surface is bright red, excoriated and moist, and around the margins the epidermis is raised and filled with turbid serum, while many of the excoriated patches are covered with impetiginous crusts.

Seborrheic dermatitis is located similarly to the impetigo, but

instead of presenting glazed raw areas it is covered with greasy scales: very often the eruption is also present about the axillæ, scalp, cheeks and nose.

Hereditary Syphilis: The Lymphatic and Cardio-Vascular Systems.

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THE lymphatic glands are always involved in congenital syphilis, though they may not attain the large size seen in tuberculosis and some of the blood dyscrasias. This polyadenitis is generally, but not always, seen during or soon after the eruption manifests itself in the very young. If the inguinal, axillary and cervical regions are examined in the syphilitic child it is not difficult to make out the enlargement of the glands in these locations: but it is of more importance for diagnostic purposes to demonstrate the enlargement of glands in those situations in which normally we find no enlargement. Such are the glands in the fourth and fifth intercostal spaces, along the sides of the thorax and the epitrochlear glands, some authorities maintaining that persistent enlargement of these glands is only found in syphilis. It is doubtless strong presumptive evidence. The enlargement of the glands in syphilis is not very great, generally about the size of a bean. Sometimes when associated with ulcerations of the skin or condylomata we have suppuration and sloughs, leaving unsightly scars, but these abscesses are very amenable to specific treatment, contrary to those made by the tubercular glands. The radial scars found around the mouth and nates are very significant, the former being considered absolute proof of hereditary syphilis by Hochsinger.

A very cursory glance only can be taken of this important subject in the time allowed tonight. Pathological changes in the cardiac ganglia are found in congenital syphilis, and also serious changes in the myocardium itself, and in the coronary arteries. Aneurysms in young children are almost always due to hereditary syphilis, unless traumatic. Inflammation of the lining membrane of the large blood vessels, including aortitis, is not uncommon in hereditary syphilis, and also endocarditis. Sclerosis of the peripheral arteries in the very young comes almost exclusively from syphilis. Inflammation and dystrophy of the veins from this cause too have been observed by Marfan, Fournier and others. That tertiary syphilis affects the heart and blood vessels to a very large extent in adult life is held by many of the best observers, far more so than was formerly thought. The increasing number of reported cases, and the large amount of literature of late years on obscure diseases and deaths in cardio-vascular diseases, would seem to support the idea that many of these cases are really due to the end changes of syphilis. So much so is this the case that many syphilographers advise that the Wassermann test be made in all heart cases as an aid to the diagnosis. That the spirochætes have a peculiar affinity for the cardio-vascular system is well known, and congenital syphilis being a tertiary manifestation generally, we expect to find and do find many of the lesions found in this system in the adult, in the infant and young child.

Hereditary Syphilis: In Bones and Joints.

Walter Truslow, M.D.,

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SYPHILIS may present lesions in bones and joints in both the hereditary and the acquired form. In the acquired form it is usually a tertiary (rarely a secondary) manifestation; and for sociological reasons, is but seldom found in children. The lesion may attack any histological structure of bone—cortex, medullary substance or periosteum—but seems to have a predilection for periosteum and especially in children, for the epiphyseal lines. It may also attack articular bone surfaces, cartilage and synovial membrane, but this last is rare, and indeed, the joint structures proper are not as frequently attacked as the bone.

As distinguished from tuberculosis (which has a greater tendency to attack joint structures), and from osteomyelitis (which tends to attack the medullary portion of long bones), syphilis is much more apt to manifest itself in several locations—that is, bone and joint tuberculosis and osteomyelitis each present at single locations, multiple involvement being only a very late condition; syphilis on the other hand tends to manifestation in several localities.

Differential diagnosis.—The history of the case must play an important part here. Sometimes the medicinal test—the so-called mixed treatment in the case of suspected syphilis—alone clears away this difficult problem. The positive Wassermann test has at times, in the writer's experience, been of great value.

The symptoms are not striking. There may be gradual emaciation and the general appearance of a patient with wasting disease, but this is rarely as marked as in tubercular joint lesions. Locally, joints become swollen, more painful and with more redness than in tubercular joints. The osteocopic pain is characteristic. It comes in long bones, especially the tibia, after the patient is warm in bed, and is described as a dull "rheumatic" ache. Joints become limited in action. If there is a discharge, it may be thinner than that of tuberculosis and it tends to fictitious healing under irregular dirty scabs, which when taken away reveal collected gummatous matter. The teeth show a characteristic notching on their approximating borders.

Treatment is medical and mechanical, but rarely if ever operative.

To sum up.—Syphilis attacks bones and joints in children; the differential diagnosis from tuberculosis, from osteomyelitis and from other bone and joint lesions is often difficult; syphilis has a greater tendency to multiple manifestation than other diseases; family history, personal history and the medicinal test must still be important factors in diagnosis; symptoms are not very characteristic, but attention is called to the osteocopic pain in long bones and to Hutchinson's teeth.

Hereditary Syphilis: The Ear.

J. E. Sheppard, M.D.,

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OF the aural manifestations of hereditary syphilis in children there is relatively little to say. The part of the ear involved is in practically all cases the internal ear, and as a necessary result of this the symptoms are subjective rather than objective. Furthermore, the symptoms are simply those of internal ear disease in general, and, considered apart from any history of heredity, or other syphilitic manifestation, or the results of a Wassermann, or other specific reaction, are not pathognomonic of a syphilitic affection of the auditory nerve structures.

The symptoms which indicate an affection of the internal ear are deafness more or less sudden in its onset, more often than not accompanied by tinnitus and vertigo in varying degrees, and occasionally by nausea or even vomiting. In addition to these we have the information gained from our functional tuning fork tests, internal ear trouble being indicated by, 1. Lowering of the limit of hearing for high tones; 2. Hearing for low tones relatively well maintained, with very little elevation of the low-tone limit; and 3. The absolute duration of both air-conduction and bone-conduction reduced as compared with the normal, bone-conduction rather more than air-conduction, but the normal ratio of air-conduction to bone-conduction, of about two to one fairly well maintained.

There are two periods of childhood when hereditary syphilis seems more prone to affect the ears, viz., from about four to six years of age, and again in the neighborhood of puberty; and at this latter age, for some reason unknown to us, girls are much more often affected than boys. At this later period of course we can get some information of value from our tuning-forks, but not in younger children. In them, given a drum membrane so nearly normal as not to indicate middle ear trouble, and a more or less profound deafness which has developed rather suddenly than gradually, whether or not we are able to elicit the presence of tinnitus and vertigo, either now or at the onset of the deafness, and we have quite sufficient to direct our attention to the internal ear, and, with or without a definite family history, but with a positive Wassermann reaction, a diagnosis of hereditary syphilis affecting the auditory nerve apparatus. I might add that as a rule this is a bilateral affection, with almost always an absolutely bad prognosis as regards the hearing.

Hereditary Syphilis: The Nose and Throat.

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CONGENITAL syphilis of the nose and throat may appear in the secondary or tertiary form. The secondary form may be present at birth, or may be delayed as late as the sixth month. The tertiary may follow the secondary immediately, but the condition is often not recognized until the fifth or sixth year.

There may be no evidence before the second dentition or puberty. The very late manifestations belong, of course, to adult life.

In the nose we may have the secondary form, known as "the snuffles." This is the most common lesion of congenital syphilis in the nose and throat. It may be present at birth, or not appear until the third or sixth week. It is a serous or sero-purulent inflammation involving the mucous membrane of the nasal fossæ, due to syphilitic infection. It is at times preceded by an inflammation involving the post nares, with a discharge into the nasopharynx. We frequently have fissures of the anterior nares, which when they contract, following healing, result in a very small opening of the anterior nares. The white radiating scars from the anterior nares are very characteristic. If the infection progresses beyond this stage, we may have a localized superficial necrosis of the mucous membrane forming a mucous patch.

In the tertiary state we may have an ulcer which may cause a perforation of the cartilaginous septum. The septum is most frequently the seat of the specific lesion, the turbinates not being so often involved. The gumma also belongs to the tertiary stage, and also involves the septum. Breaking down of the gummata may result in the partial, or complete destruction of the septum. The resulting scar contraction causes the saddle-shaped nose with the turned up tip.

The perforation of the hard palate does not often occur in childhood. The atrophic type of rhinitis is probably a result of a syphilitic infection in the nose in infancy.

In the fauces and pharynx the secondary stage shows itself as an erythema or mucous patches. In the tertiary stage we have usually a diffuse gumma with ulceration and destruction of the soft palate. The resulting scar formation and contraction produces marked malformation of the pillars of the fauces, the soft palate and pharynx. Sometimes a complete occlusion occurs due to the formation of a dense mass of scar tissue between the soft palate and the posterior pharyngeal wall.

The larynx is less frequently involved in congenital syphilis than the nose, fauces and pharynx. Within the first few months of life we may have a perichondritis of the laryngeal cartilages, or, in the tertiary stages, ulceration. Gumma of the larynx does not belong to childhood.

With the foregoing manifestations of congenital syphilis we have the symptoms which are due to the disease itself and those resulting from the local lesions. The nasal obstruction produces its characteristic symptoms, and the atrophic rhinitis the symptoms with which we are all familiar. The malformation and destruction of tissue in the fauces and pharynx, as well as the lesion in the larynx itself, causes at times marked changes in the voice.

The importance of early diagnosis of congenital syphilis of the nose and throat cannot be too strongly emphasized. Every physician who has to do with children should familiarize himself with the early manifestations of the disease in the nose and throat, as it oftentimes gives us the first clue to congenital syphilis.

Hereditary Syphilis: Reliability of the Wassermann Reaction.**Joshua M. Van Cott, M.D.,**

Brooklyn-New York.

IN general the results of the Wassermann reaction in congenital lues scarcely differ from those in acquired syphilis. Children who at first show any sort of luetic symptoms always give a Wassermann reaction. They differ from those acquiring the disease by their persistent resistance to treatment. In these cases changes are very frequently shown in the spinal fluid.

Comparative tests on mother and child, both of whom show clinical symptoms, give several combinations. Both may be positive or both negative, one may be positive and the other negative, or vice versa.

Knöpfehnacher & Lehnendorf get a positive Wassermann reaction in 50 per cent of the mothers who give birth to syphilitic children.

Friedland, on the other hand, found a positive reaction in every such mother. Thomas and Boas say that a positive reaction in the mother gives a sure expectancy of a syphilitic child. Although a child may give a negative result immediately after birth, the reaction may later become positive.

According to Leavy (with Wassermann) almost without exception, both mother and child give a positive reaction. In these cases (and in the Munich Clinic, Busch) the mother showed symptoms of lues in only a small number.

On the ground of serodiagnostic experience it can be said that lues is not directly transmitted from sperma to ovum, but, like all other infectious diseases from an already infected mother, by way of placental circulation. In other words, there can be no congenital lues in a child without a similar latent condition in the mother.

The later manifestations of hereditary lues are keratitis parenchymatosa, disturbances in hearing, bone changes and disturbances in brain development. In keratitis parenchymatosa the reaction is always positive. In deafness and bone changes one finds frequently a negative reaction, probably due to the long period which has elapsed since the disappearance of florid symptoms.

In idiots a large percentage give a positive reaction, some in the serum, some in the spinal fluid.

Hereditary Syphilis: Its Diagnosis in Infants and Children.**Elias H. Bartley, M.D.,**

Brooklyn-New York.

ACQUIRED syphilis is so rare in infancy and early childhood, and the clinical picture is so like that seen in adults, that we may pass it by with a mere reference.

The congenital form is the syphilis of early life. The diagnosis of congenital syphilis in infants rests upon three lines of inquiry:

1. The history of the parents, including the history of the mother's previous conceptions.
2. The symptoms found in the child.
3. The serum reaction of the mother, or of the child itself.

A positive history of syphilis in either parent is proof of hereditary syphilis in the child, although it may show no symptoms of the disease. A history of repeated abortions, usually coming later in the

period of utero-gestation with each succeeding pregnancy, until a living, poorly-nourished infant, or even a normal appearing baby is born is typical of syphilis in the parent or parents. The severity of the infection in the infant is usually proportional to the activity of the syphilitic process in the parent or parents at the time of conception.

As the disease in the parents becomes quiescent as the result of treatment, or with the lapse of time, abortions may cease and an apparently healthy child may be born of syphilitic parents. This is especially true if the mother is kept under treatment during the greater part of the time of her pregnancy.

The symptoms of the disease in the child may appear early; *i. e.*, within the first month or six weeks of life, or as late as the fifth to the fifteenth year, or even later.

The symptoms which appear early resemble the secondary symptoms of acquired syphilis. That is, they are those which affect the nutrition, the mucous membranes and skin, with enlargement of the spleen and liver.

Those which appear later in life resemble the tertiary symptoms of acquired syphilis.

One of the earliest symptoms, and one rarely absent, is rhinitis, or "snuffles." There is redness and swelling of the mucous membrane of the nose with a very irritating, profuse, muco-purulent discharge, frequently tinged with blood, which irritates the skin of the upper lip. Crusts form in the nose, which retain the discharge, leading to deeper inflammation of the membrane and often to ulceration extending to the cartilages or bones, and causing perforation of the septum or deformities. There is also a moderate degree of hoarseness of the voice.

The rashes on the skin are characterized by their great variety. Almost every variety of eruption is seen, such as the usual maculæ, the maculopapules, pustules, ulcerations, scaly eruptions, smooth simple redness, bullous eruption or pemphigus, etc. In most cases, however, the eruption at its beginning has a fairly characteristic appearance. It appears as round, discrete, rose-red macules, with healthy skin between the spots, which later become copper-red in color.

The rash is most likely to appear first on the buttocks, legs and lower abdomen. This is by no means the absolute rule. It may appear over the whole body and face.

When the rash is especially prominent around the buttocks it may ulcerate and form condylomata. On the palms of the hands and soles of the feet it is attended with the formation of bullæ, or with profuse desquamation. In either case the skin becomes smooth, glazed and copper-red in color. This appearance of the skin in these locations is very characteristic, and is seldom met with in any other condition. Radial fissures frequently occur about the angles of the mouth, the eyes, the anus or vulva, which are very difficult to heal. Mucous patches in the mouth or vulva are sometimes seen. The nails are frequently distorted or there is inflammation of the matrix, giving rise to onychia, bird-claw nails, etc. The bones of the proximal phalanges of one of more fingers are not rarely enlarged, giving a fusiform swelling which is difficult to distinguish from the similar dactylitis met with in tuberculous children. Sometimes an acute epiphysitis of the long bones with swelling and tenderness near the joints, similar to that seen in scorbutus, is met with.

Malnutrition is a constant result of the more marked cases, as

of all those which show active symptoms of syphilis, and this often presents some difficulty in the differential diagnosis between syphilis, atrophy or marasmus and tuberculosis. We must often resort to the other symptoms here mentioned to differentiate these cases from the other forms of marasmus. Owing to this malnutrition the infant does not thrive as it should, its skin is sallow and wrinkled, and the teeth are delayed and readily decay after their eruption.

The spleen is regularly enlarged and is palpable below the margin of the ribs.

The enlargement is sometimes very great.

The liver is only moderately enlarged.

The diagnosis of syphilis in older children is attended with more difficulty than in early life.

Hutchinson, long ago, called attention to three symptoms which he regarded as very important aids in the diagnosis of syphilis in older children. These were: First, the crescentic notching of the upper central incisors of the permanent teeth; second, the frequent occurrence of interstitial keratitis with iritis and corneal opacities; third, sudden deafness not due to disease of the middle ear.

We may add to these periostitis of some of the long bones, especially of the tibia, ulna, or radius, destructive ulcerations of the bones of the nose, or of the palate, and enlarged glands and enlargement of the spleen.

The enlargement of the epitroclear glands is regarded as highly diagnostic by some and of questionable value by others; but when taken with the other symptoms here enumerated it has considerable diagnostic value.

While more or less retarded growth and development are shown by syphilitic children who show active symptoms before puberty, these symptoms are not evident in those children born of syphilitic parents who do not show active symptoms of the disease.

The blood in congenital syphilis usually shows a rather marked secondary anemia. In cases with a severe rash there may be a mild grade of eosinophilia, which diminishes as the rash improves. *Serum reaction.* The Wassermann-Neisser Bruck reaction is now regarded as the most decisive test for syphilis. A discussion of the technique of this test would be out of place here. As it is now believed that every mother who bears a syphilitic child is herself syphilitic, it is often best to test the mother where the disease is suspected in her infant. The necessary amount of blood can usually be more easily obtained from her than from a small infant. When applied to the serum of the child it is said to be positive in 98 per cent of cases of congenital syphilis.

This test, unfortunately, requires about 10 c. c. of blood, which is a large amount to draw from many weakly babies. The Noguchi modification can be done on as small an amount as 1 or 2 c. c. of blood, and is therefore more manageable in young infants, but is regarded by most pathologists as less satisfactory than the original form of the test.

The luetin test of Noguchi is much simpler and can be done by any one, even if not accustomed to the more complicated laboratory tests. It consists in injecting into the skin an emulsion of the killed *treponema pallidum* organisms, when a positive reaction is shown by an indurated papule at the site of the injection within twenty-four to forty-eight hours, surrounded by a diffuse zone of redness. Oc-

casionally the papule forms a pustule and at times the above reaction is delayed until a week. The reaction is apparently specific for syphilis, and is said to be positive in hereditary syphilis in from 90 to 100 per cent of cases. It seems to be especially reliable in the latent cases, and seems to outlast the Wassermann reaction in cases under treatment. If these claims are borne out by further experience, it will replace the more complicated serum reaction.

DR. MURRAY B. GORDON, in discussion, said:—"There is one thing to which I wish to call attention, especially to pediatricists, and that is that the luetin test is of more importance, especially in dispensary work, than the Wassermann reaction, because in dispensary work one cannot get enough blood from patients who are only a few months old up to, say, five to six years old, to treat the blood for the Wassermann; but if we use the luetin test we have something that has been proven to be reliable, almost as reliable as the Wassermann reaction.

"At the Polhemus Clinic we have been using the luetin test for the past year as well as at the Home for Consumptives and have obtained very good results.

"The luetin test was originated by Dr. Noguchi. It is an emulsion of dead spirochæte. We use intradermal injections and 7/100 c. c. are injected into the skin of the child.

"During the past month or so we have been startled by some 'yellow' newspapers telling us that the injection of luetin has caused syphilis in certain of the city hospitals. In the seventy-five cases which I have done I haven't seen any bad results. We haven't given syphilis to anybody. I think that the men who are doing more work with children than any other class of patients should look into the question of the luetin test. We find that it is just as important to try the luetin test as the Wassermann reaction, especially in dispensary work where people won't allow us to take 10 c. c. from a vein or from any other part of the body. We have been working on this at the Polhemus and will probably publish a paper on it, but I wished to bring it to the attention of the Society.

DR. WILLIAM M. HUTCHINSON asked the details.

DR. GORDON continued:—"The emulsion is prepared by Dr. Noguchi, and I think that he is willing to give it to anybody who wants to try it. It is an emulsion of dead spirochæte. The syringe used is the old-fashioned tuberculin syringe of 1 c. c., and an equal amount of normal saline solution and luetin are taken up in the syringe and 7/100 of a c. c. are injected into the skin so that a small bleb is formed. The skin is prepared by washing with alcohol.

"The doctor when he first tried it out used a control on the other arm and this control was a plain normal saline solution, but after one becomes accustomed to the reaction the control is no longer necessary.

"Now as to the reaction: in about twenty-four to forty-eight hours a small papule is formed at the site of the bleb and this papule in some cases becomes purulent in a few days and then goes on in this purulent form and subsides in a few weeks to a macule which may persist for months and months. In some cases we noticed it for eight months. If the reaction is negative nothing at all is seen at the site of the injection.

"The luetin test persists with anti-syphilitic treatment, while the Wassermann does not."





EDITORIAL



RELIGION OR GAIN?

THE decision of the Appellate Division of the Supreme Court affirming the conviction of one Coles, a so-called Christian Science healer, of practicing medicine without a license comes like a refreshing breeze on a sultry day. The Court disregards the customary plea put forward by these "healers" that they are, in treating a sufferer by their methods, actually exercising their religion, and attacks the question from the point of gain, claiming that healing for profit, and as a means of livelihood, comes within the license to practice act. This seems an entirely rational view. The religious enthusiast may properly regard the relief of human suffering as a field for his efforts—prayers for the sick are a part of almost every ritual—and there can be no impropriety in accepting the gift that gratitude may prompt, but it is a far cry from such a situation to that of the Christian Science healer who opens an office and advertises that he will, for a fee, treat all comers, and the more the merrier. This very act carries the presumption that he is able not only to heal, but also to diagnose; the one predicates the other. Add to this that the healer does not broach the need for religious conviction to the patient and the purely commercial character of his occupation becomes entirely evident. When this interpretation is finally confirmed by the Court of Appeals, the charlatans who are now a source of danger to public health will find little incentive to practice "for love" and will drift into other fields. The general profession owes a debt of gratitude to the able counsel of the New York County Medical Society who have achieved so notable a victory.

H. G. W.

THE NEW NARCOTICS LAW.

THE recent commitment to a State Hospital for the Insane of a drug addict marks a very real step forward in the attitude of the State of New York toward this class of patients. While primarily the Boylan law seems intended to curb the sale of narcotic drugs, that particular provision that may be applied to drug habitués greatly simplifies what is often a perplexing question, for in the past restraint of drug addicts could only be effected by voluntary commitment—a most unsatisfactory method—or by luring the patient into a neighboring state where summary commitment was legalized. The present method places the patient in the best of surroundings and protects him by all the safeguards of our excellent insane laws. The main difficulty at present is the shortage of funds available for the care of patients assigned by the courts to general hospitals. The suggestion that funds already appropriated for the care of inebriates be temporarily diverted to the use of those committed under the new law seems unwise, as there is urgent need for the fuller development of the

rational treatment of chronic alcoholics for whom there has been little chance in the past outside of private sanatoria and one or two special hospitals that are hardly available for the needy. No, better to utilize such accommodations as are available and supplement them as rapidly as may be. The very fact that a beginning has been made, that there is no practical limit to the authority of those to whom the care of these unfortunates is entrusted, and that these facts have been well advertised will go far toward checking the habit among those not hopelessly enslaved; while the greater difficulty with which habit forming drugs may be obtained will still further aid in reducing the number of those requiring state aid. On the other hand a brisk clandestine trade may be expected with neighboring states that have not yet established equally stringent laws. It is greatly to be hoped that the example of New York State may serve to stimulate all the remaining states of the Union to a rational treatment of matters affecting public health and eventually lead to the establishment of that National Health Department that is so urgently needed.

H. G. W.

AUTOMOBILIOUSNESS.

THIS new variant of an old trouble seems rather prevalent just now. The condition seems to start with autointoxication which, in turn, is an exaggeration or exacerbation of enthusiasm arising from overindulgence in a recently acquired motor. The superabundance of fresh air and exhilaration induce overeating, convenience leads to lack of physical exercise, waste products accumulate and automobiliousness supervenes. The disease in its incipency may be recognized by a characteristic facies plus a peculiar affectation of dress and speech in which motor technicalities predominate to the exclusion of rational conversation. Satiety gradually tends to effect a restitution of the normal, but the physical changes are less easy of correction and may require drastic measures such as ablation of the motor, a gasoline-free diet and carefully regulated exercise before a cure results.

H. G. W.

LEPROSY.

THE address of assistant Surgeon General W. C. Rucker before the last meeting of the A. M. A. brings into unpleasant prominence a condition of affairs in the United States that serves to emphasize the imperative need of a centralized control of public health problems. Coming from such a source the statement that leprosy is on the increase must be accepted as authoritative, while the total lack of concerted effort to check this repulsive affection demonstrates the futility of unaided state control. State sovereignty is an excellent idea so long as it deals exclusively with immaterial matters, but the utter folly of endeavoring to limit authority by an imaginary line with a sheriff administering contradictory laws on either side is too evident to require comment when it comes to questions of human conduct. The inhuman treatment to which the leper Early has been subjected in the past must be familiar to everyone who reads, and is clearly illustrative of the diversity of treatment possible for an unfortunate of this class. In one state he was merely placed in a hospital; in another he was isolated under reasonable restrictions; in a third he was imprisoned under armed guards in a solitary pest house. Two

points made by Dr. Rucker place both the limitation of the disease and its necessary regulation in clear relief—it is only mildly contagious, and it dies out where cases are segregated. Place its control in the hands of a Federal Board of Health with power to handle the problem unhampered by the hysterics of individual sovereign states and two results may be expected—the individual leper will receive equable treatment, and the spread of the disease will be checked.

H. G. W.

FAITH WITHOUT WORKS.

DR. SCHLANGE, writing in the *Roussky Vrach*, has recently promulgated the theories that "holding the breath" affords an excellent gauge of the presence of latent weakness of the myocardium. His statement, as translated and commented on in the *New York Medical Journal*, is to the effect that inability to hold the breath for more than twenty seconds is indicative of a weak myocardium and, conversely, that the capacity of refraining from breathing for periods up to a minute argues the possession of a strong heart. A daily paper quoting Dr. Schlange in its news columns, emphasizes a minor note and announces that the discovery furnishes a test by which one may judge of the safety or danger of taking an anæsthetic. The effect of this statement upon a group of tabbies on a hotel veranda engaged in discussing their ailments and operations—a veritable organ recital—was laughable. They more or less openly put it to the test at once. The fat ones turned pale with terror, especially one, who rather unsuccessfully strove to hide her light under a bushel, as it were, by tight lacing. The thin ones who succeeded were, on the whole, rather pleased by the result. The incident, trivial as it is, serves to emphasize the literal faith that the laity have in newspaper medicine and illustrates the stand already insisted on in these pages that only such statements should be promulgated for public reading as have stood the test of critical inspection. The lay press, even when honestly disposed, cannot be trusted to sift fact from fancy. A bureau of medical publicity is needed, and it must be big, and broad and fair enough to invite the full trust and confidence of the entire medical profession.

H. G. W.





Society Transactions



TRANSACTIONS OF THE BROOKLYN SURGICAL SOCIETY.

Program.

Regular Meeting held January 2, 1914.

The President, RUSSELL S. FOWLER, M.D., in the Chair.

Report of Cases.

1. E. J. McEntee, M.D.,
 - (a) Large Ventral Hernia. Operation. Patient.
 - (b) Rupture of the Ligamentum Patellæ. Operation. Patient.
2. J. M. Downey, M.D.,
 - (a) Ununited Fracture of the Tibia. Patient.
 - (b) Giant Cell Sarcoma of the Upper End of the Humerus. Patient.
 - (c) Hematogenous Infection.
Case discussed by Dr. Russell S. Fowler, Dr. Joseph P. Murphy, discussion closed by Dr. J. M. Downey.
3. Geo. I. Miller, M.D.,
 - (a) Complete Congenital Absence of the Vagina. Patient.
 - (b) Torsion of the Omentum.
Case *a* discussed by Dr. J. A. Lee, discussion closed by Dr. Geo. I. Miller.
Case *b* discussed by Dr. J. M. Downey.
4. Earl H. Mayne, M.D.,
 - (a) Six Cases of Tuberculosis of the Ileo-Cecal Region Associated with Appendicitis. Patients.
Discussed by Dr. L. W. Pearson, Dr. G. E. Lack, Dr. J. M. Downey, discussion closed by Dr. Earl H. Mayne.
5. C. E. Lack, M.D.,
 - (a) Prolapse of Stomach and Colon. Report of Cases.
Discussed by Dr. H. F. Graham, discussion closed by Dr. C. E. Lack.
6. J. C. Kennedy, M.D.,
 - (a) Cholelithiasis, with Complications. Patient.
 - (b) Brain Abscess. Patient.
 - (c) Paracentesis Pericardii. History.
 - (d) Acute Pancreatitis. Patient.
Case *a* discussed by Dr. L. W. Pearson.
Case *d* discussed by Dr. Russell S. Fowler.
7. Roger Durham, M.D.,
 - (a) Appendicitis with Large Endoroliths. Specimen.

Ventral Hernia. Patient.

Dr. E. J. McEntee.

Mrs. A. W., age, 39 years; married. Fifteen years ago fell from a ladder, sustaining an injury to the abdomen. A short time after this, a swelling ap-

peared at the umbilicus, which gradually became larger until it reached the size of a small water-melon. During this time the patient went through four pregnancies. At the time she came under my observation at St. Catharine's Hospital she presented a large ventral hernia hanging below the level of the pubes, absolutely irreducible and causing great distress in walking on account of its great size and weight. The skin over it was much ulcerated and two large contact ulcers were present, one on the lower part of the mass and the other on the skin of the abdomen, on which it rested. The patient was put to bed and in two weeks the ulcers had healed under treatment and patient operated on, as follows:

Operation, April 24th, 1913, ether anesthesia. After the usual preparation a transverse elliptical incision about seven inches long was made over the upper surface of the neck of the hernial mass down into the sac, where large masses of omentum were found densely adherent to the wall of the sac. These adhesions were carefully separated and the omentum tied off and removed. On examining the contents of the sac, which were absolutely irreducible owing to adhesions, they were found to consist of the whole stomach, a part of the transverse colon, some small intestine and omentum, all matted together. After a great deal of patient separation of adherent parts and the removal of the omentum, the ring was found. It was about four inches in diameter and also adherent to the sac contents which were now separated from the ring and with the utmost difficulty were stuffed back into the abdomen, which already seemed uncomfortably full. Another transverse incision over the lower surface of the sac connecting the ends of the upper incision was made and the entire sac now removed. The edges of the ring were overlapped and mattress-sutured in a vertical direction with chromic gut. The skin was then sutured with silk-worm gut transversely. Although much post-operative trouble was anticipated owing to the prolonged and extensive manipulation required, none occurred. The wound healed primarily and patient made an uninterrupted recovery and has remained well since. Examining the abdomen now we find the patient with a good strong abdominal wall, with no sign of recurrence.

Rupture of Patellar Ligament.

Dr. E. J. McEntee.

Mr. T. D., age, 59 years; married. Watchman by occupation. Family and previous history negative. Present history: On September 8th, patient slipped on sidewalk on a banana skin and fell to the ground, striking the left knee. He was unable to get up and was brought to St. Catharine's Hospital in the ambulance. Examination revealed the left knee joint much swollen and distended with fluid, the patella drawn up about two inches above its normal site, but not fractured. The power to extend the leg was lost. A ruptured patella ligament was diagnosed, which was confirmed by X-ray taken by Dr. Williams. Patient was put to bed with posterior splint and compresses applied to the joint and acute symptoms allowed to subside.

Operation, September 22nd; ether anesthesia. A longitudinal incision about five inches long was made over the anterior aspect of the joint which was freely opened and found to contain much fluid, bloodclots, etc. The patella was found high up and absolutely free from all lower attachments and the capsule of the joint torn on both sides. The joint was now thoroughly cleansed by dry sponging. The ligamentum patellæ was split down its middle for about three-fourths of an inch. The patella was brought down and inserted in the split made in the patellar ligament and sutured there with two kangaroo tendon sutures. The joint capsule was now sutured on either side with chromic gut and the wound closed without drainage. Primary union occurred, passive motion was begun at the end of two weeks and the patient discharged with good motion and able to walk at the end of four weeks. It is interesting to note that this man has a rupture of the quadriceps extensor muscle on the opposite leg which he sustained from a fall about two years ago and for which nothing was ever done. However, he has fairly good use of that leg and with the repair of the ruptured patellar ligament of the other leg, is able to walk very well.

Hematogenous Infection.

J. M. Downey, M.D.

Mrs. A., 32 years old,—married—two children. Previous history negative. On June 9th, 1913, she had a miscarriage. Two days later was curetted. In

the evening of the curettage she was taken with a chill followed by fever. During the two weeks that she was home she had chills and sweats a number of times followed by fever. At the beginning of the third week she was removed to the Holy Family Hospital.

Examination showed a small abscess the size of a half dollar on the left forearm. Temperature $102\frac{1}{2}$ —pulse 95. Blood examination showed whites 9,000; reds, 3,000,000; differential, 75. One week later another abscess about the same size appeared on the right forearm and was opened up under cocaine,—as the previous one—drained, and healed up after two weeks. One week after the abscess appeared in the right forearm, an indurated mass appeared over the right thigh, at the upper third, inner side. Chills continued, and fever was 103. Some pain and tenderness over the left kidney. Examination of urine negative. Patient was put under an anesthetic and the indurated condition of the thigh opened up. No pus was found. Incision was then made over the left kidney and a perinephritic abscess evacuated. This was drained, and closed up at the end of the fourth week. About this time the right leg became swollen and it was noticed that she had a phlegmasia alba dolens, also a large indurated mass about the size of a silver dollar just internal to the long saphenous vein. This was opened up by Dr. Fiske to whose service she had been turned over. No pus was found, and she left the hospital six weeks later. The one on the thigh had practically healed, the leg itself remaining very large. I have seen her three times since she left the hospital and she has improved, so that the leg is practically normal. During the time that she was in the hospital, she was examined by the Visiting Gynecologist, Dr. Zimmerman, and nothing was found in the pelvis.

I believe this to be one of those thrombophlebitic infections of the uterus or ovarian vessels due to the curettage.

Ununited Fracture of the Tibia. Patient.

J. M. Downey, M.D.

This patient, a male, born in Italy, 36 years old, a laborer, who received a fracture of the leg which was operated upon and put in a cast; the nature of such operation I am unable to state. At the end of ten weeks he had an ununited fracture. The next operation was a Lane plate which was unsuccessful and became infected. The third operation consisted in curetting the ends of the bone, put in a plaster cast and allowed to walk on it. At the end of six weeks he was discharged from the hospital. Two weeks later he turned his ankle and was brought into the Hospital of the Holy Family with the site of the old fracture opened and non-union present. In other words, he had a fibrous union which gave away, the ends of the bone being exposed. After ten days in bed permitting the wound to heal, the patient was operated upon by nailing the two ends of the tibia together and put in a cast with the proper dressing. He made an uninterrupted recovery. At the end of two months a slight necrosis started about the head of the nails and they were removed.

At the time that we first saw him, he had considerable eczema over his leg, from the number of operations which he had had, and the applications which had been made. I present him to show you that at the end of three months after this operation he had a very good result, considering all the surgery he has had.

In addition to the operation, there were two Wassermann's made and both were negative. The history also is negative in regard to specific treatment. He was put on a mixed treatment and after leaving the hospital, for two months I lost sight of him. Later there was a slight breaking down in the scars and he was put back on mixed treatment and has continually improved.

The X-ray picture shows very good union.

Giant Cell Sarcoma of the Upper End of the Humerus. Patient.

J. M. Downey, M.D.

The second patient I saw in July. The previous history is negative. She said that she noticed a small lump on the outer part of the arm about eight months before that time. I sent her to the hospital and two days later made an incision and removed part of the growth and had it examined—in fact two

examinations were made, and they showed that it was a giant cell sarcoma. She was operated on about the middle of November and a thorough curettage was done, removing considerable tissue, and after that I swabbed it out with pure carbolic and then washed that out with alcohol. For a time she had quite a reaction. It became very much swollen and we felt as though we were about to have a very prompt return of this condition. Then that subsided and within the last three weeks it has grown very rapidly again, so that I present her as one of those cases that sometimes are unsuccessful.

In answer to a question by Dr. J. B. Bogart, as to whether or not X-rays had been taken of this case, Dr. Downey said:

The first X-ray by Dr. Eastmond showed this growth and the second, by Dr. Williams, was taken after the operation. I have them all.

Answering a question by Dr. J. D. Sullivan as to whether or not the scapula was involved, Dr. Downey said:

The soft parts of the scapula were swollen but as to the scapula I cannot say.

Answering a question by Dr. J. A. Lee as to whether or not there was a history of traumatism in the case, Dr. Downey said:

With regard to traumatism: first she said there was none and later on she said she was hurt at one time and that was two years ago.

Answering a question by Dr. J. D. Sullivan as to whether the X-ray shows a thinning of the humerus, Dr. Downey said:

It shows very little change in the humerus.

To a further question by Dr. J. D. Sullivan as to whether the head of the humerus was enlarged or not, Dr. Downey said:

It was not enlarged at the time of the operation.

Answering a question by Dr. H. F. Graham as to whether the condition started in the medulla, Dr. Downey stated that it had, and to a further question by Dr. Graham as to whether the growth worked its way through to the surface, Dr. Downey replied that it had.

Complete Congenital Absence of the Vagina.

By Geo. I. Miller, M.D.

DR. J. A. LEE, in opening the discussion, said:—"I have had two cases of complete congenital absence of the vagina, and while the surgical difficulties which we had to deal with were somewhat different from Dr. Miller's excellent presentation here to-night, at the same time they are perhaps worthy of note, showing possibly the dangers involved in not making a proper diagnosis. This case was originally reported by me some ten or twelve years ago before this society, and the girl, on reaching the age of fifteen or sixteen, did not menstruate. In the hands of a physician she had what I presume to be her hymen punctured. What she had was practically the same thing as Dr. Miller reports here, congenital absence of the uterus and vagina, which I will tell you of later. The vagina was about one-half inch in length and when an attempt was made to perforate what was supposed to be an imperforate hymen, an incision was made into the bladder, with the result of a permanent vesicovaginal fistula. I was first called to see the case when the woman had an attack, which I presumed to be an appendicitis, and upon operation we found not so much of an appendicitis, but she had a good many abdominal adhesions, and it gave us a very beautiful chance to see the inside of one of these cases of congenital absence of the uterus and vagina. On the right side she had what was probably originally an ovary, which at this time had degenerated into an ovarian hematoma, and it was the infection produced by this hematoma that produced her symptoms. She had extending, as Dr. Miller says, from her broad ligament a little kernel, thickening at the upper end of the broad ligament, and there were two fibrous bands extending out from that. She had on the right side an ovarian hematoma and on the left side an ovary which had undergone cystic degeneration. I removed both of them and she made a very good recovery.

"I will say that in regard to this fistula, this vesicovaginal perineal fistula, that previous to coming under my care seven attempts had been made to clear it up and they had all been unsuccessful, and I made an attempt to clear it up and also failed. I again attempted and on the advice of the late Dr. Cochrane made the attempt by having the patient in the Simms position and used silver wire sutures, and as a result of that she got a perfect recovery and has remained well ever since.

"The other case of congenital absence of the uterus and vagina came into the hospital about one or two years ago with symptoms of acute perforated appendix and on opening her up we found that she had a hematoma in the right ovary that had become twisted and she suffered practically from ovarian hematoma with twisted pedicle and upon removal she made an uneventful recovery. The abdominal findings in this case were practically the same as the previous case I reported, and Dr. Miller reported large rudimentary type of uterus, with two bands extending out into the broad ligament."

DR. GEORGE I. MILLER, in closing the discussion, said:—"I wish to state that in the last report of Dr. Steckles, who performed the last operation by this method, he states that the transplant continued to secrete intestinal juices, varying in quantity according to the amount of food that his patient took. When the patient took an excess of proteids he found that she secreted about 7 grams of fluid in twenty-four hours, and when she took carbohydrates in excess she secreted about $3\frac{1}{2}$ grams of fluid, and when she took fats in excess she secreted 2 grams of intestinal fluid. He also cautions against ordering corrosives for irrigation. He claims that corrosive sublimate and carbolic acid will be rapidly absorbed through the mucous membrane and he suggests saline or plain water. My patient tells me that she has a whole lot of fluid secretion, but I cannot speak to her to ask her if she has any varying as a result of the kind of food she eats.

"What occurs to my mind is in this part of the ileum as to just what would happen to this tract of mucous membrane if the patient should contract typhoid, or will this patient be immune from typhoid?"

Torsion of the Omentum.

By Geo. I. Miller, M.D.

DR. J. M. DOWNEY, in discussion said:—"I have had one case of torsion of the omentum, which I operated on following a laparotomy. Part of the omentum seemed to be adherent to the laparotomy wound and the omentum inclined, I suppose, to free itself from this particular difficulty, became twisted, and the operation was done for intestinal adhesions. It was supposed that she had some adhesions following the operation for laparotomy.

"Part of the omentum was caught in the laparotomy wound and formed a very long omental twist. This was relieved and she made a very prompt recovery."

Giant Cell Sarcoma of the Upper End of the Humerus. Patient.

By J. M. Downey, M.D.

DR. RUSSELL S. FOWLER, in opening the discussion, said: "I have had two of these cases of sarcoma of the upper end of the humerus, and while the principle seems to be that giant cell sarcoma is not malignant, in both of these cases of mine the soft parts were involved and in both cases it was necessary to do an amputation of the entire extremity. It would seem that that would be the only treatment for the present case."

DR. JOSEPH P. MURPHY, in discussion, said: "I have had a case of giant cell sarcoma of the upper end of the humerus. I think that it was operated first by Dr. Sullivan, who curetted out a good portion of the bone and she went along for several years and afterwards came to me and I did a radical operation to the scapula and humerus and she got along all right for several years afterwards."

DR. RUSSELL S. FOWLER, in discussion, said:—"I had a third case which I showed before this society (in fact, two of the cases were shown here), which was that of a young Hebrew, whose picture appears in Beck's book on fractures. It was a case which was first mistaken for an impacted fracture of the head of the humerus. He came into my hands and I did an interscapulo-thoracic amputation. I think that the head of the left humerus was the one first involved. The curious part is that he developed a symmetrical disease in the head of the right humerus subsequent to operation. First the head of the left humerus was involved and then the head of the right humerus and subsequent to that he developed a pulmonary metastasis."

DR. J. M. DOWNEY, in closing the discussion, said:—"I had one other case that I operated on. That was in the scapula and he didn't have a recurrence for six months. I again operated on him and had two or three slides made and took him after the operation over to Dr. Coley. Dr. Coley said that it was an ideal case for his toxins or serums. I put him under his care and at that time it hadn't extended any further than the scapula, but the spine of the

scapula was principally involved. I treated him for about four months without any benefit whatsoever, and I thought of taking that up again with him and I was wondering if in these low forms of malignancy the X-ray probably might help us. The patient is thoroughly opposed to having an operation as that was suggested to him some time ago."

Tuberculosis of the Ileo-Caecal Region Associated With Appendicitis.

Earle H. Mayne, M.D.

JOHNSON, in Volume II of his *Surgical Diagnosis*, calls attention to Tuberculosis of the Ileo-caecal Region with the formation of a Tumor, and I shall quote from his description of this condition.

"Of very considerable interest from a diagnostic point of view is the not uncommon form of tuberculosis of the cecum and lower end of the ileum associated with the production of a definite tumor in the right iliac fossa. Whether this form of tuberculosis is ever a distinctly primary affection or is secondary to tuberculosis of the lungs, of the mesenteric lymph nodes or elsewhere, is not certainly known.

"The pathology of the disease was especially studied by Conrath. He separated the lesion into two types. In the first, the disease commences in the peritoneal coat of the intestine as a localized tuberculous process with the process probably originates in a caseous mesenteric lymph node. The process extends from without inward, finally to involve the mucous membrane of the gut and ulceration thereof, and is accompanied by extensive inflammatory thickening and hypertrophy of all the coats of the intestine, so that the bowel forms a firm, knobby tumor; the lumen of the gut is thereby markedly diminished.

"The other form begins as a tuberculous ulcer of the mucous membrane of the cæcum or ileum or both; more often the cæcum is most extensively diseased. As in the other form inflammatory hypertrophy and great thickening of the wall of the bowel, narrowing of its calibre and the formation of a firm tumor often of considerable size, is the regular result. In this form perforation, rarely sudden and acute, more commonly slow and gradual may take place; but the most important symptoms are those due to progressive stenosis of the bowel. In a certain proportion of these cases, the disease extends outside the bowel and lymph nodes and produces tuberculous peritonitis. In some cases the tuberculous mesentery glands which are always present will break down and form typical cold abscesses. Occasionally rupture of an abscess takes place into the peritoneal cavity with all the signs of acute peritonitis. The tumor is sometimes mistaken for malignant disease.

"In general it may be said of ileo-cecal tuberculosis that the disease usually runs an exceedingly chronic course, and most of them fade away and die of chronic intestinal obstruction, phthisis or some septic complication, unless they are recognized early and the modern treatment of tubercular disease instituted and prosecuted with vigor and persistence."

The third case I shall present shows a type of the disease in an advanced stage; the other cases show the disease in the earlier stages, stages in which a cure can be reasonably hoped for, if the case can be treated by up-to-date methods.

In all these cases except the third, a diagnosis of appendicitis was made. In five of the six cases, the appendix was the seat of distinct disease; in one it was not. In all, however, enlarged lymph nodes were discovered and their probable character determined by microscopical examination, reaction to tuberculin, the Moro or Von Pirquet tests. In one case, sometime after the operation, pulmonary symptoms developed and an X-ray showed scattered tubercular areas through the lungs.

In all the cases except the last, steady improvement in the general condition of the patients has taken place under forced feeding, more perfect sanitation, and close attention to the general health. Tuberculin has been given to three of the cases, and, in the opinion of the writer, with benefit.

I believe that if we are to accomplish real success in these cases, early recognition and vigorous treatment are necessary. Where the disease cannot be definitely made out without exploratory laparotomy, then it should be done; for only by definitely determining the true etiology and the seriousness of the trouble can the patients or their guardians be induced to carry out the proper treatment.

Case I.—Louisa K., 8 years old. U. S. No family history of tuberculosis. She is the youngest of five children, the others being exceptionally healthy.

Has had the advantages of splendid hygienic surroundings and good care, in spite of which she has always been delicate, has had no inclination to play naturally and has complained of being tired. Appetite erratic.

Twenty-four hours before her admission to the Bay Ridge Sanitarium she was taken with pain and tenderness accompanied with rigidity in the right iliac region where a distinct tumor was present when first seen. Temp. 104, p. 120, blood count, L. 15,600, p. 76 per cent.

Operation on August 8, 1912, 24 hours after onset of acute symptoms. An acutely inflamed appendix was found and removed. It was adherent to a mass of greatly enlarged mesenteric lymph nodes which formed the tumor found before operation. Several other glands in the ileo-cecal region were also enlarged. The large mass of glands was removed, examined, found cheesy and tuberculous.

Case II.—John G. K., 13 years old, U. S. Family history of tuberculosis. Had usual diseases of childhood. General appearance excellent. Weight 130 pounds; was considered too fat. For several years the boy seemed lazy; did not care to play or enter into the games of other boys. Had an attack of acute appendicitis when 8 years old; this subsided in about one week. Blood count during attack, L. 14,500, p. 78 per cent.

A second attack occurred two years later. A third attack came on two months before operation. The blood picture in the last two attacks was practically the same as in the first. After the first attack he had frequent attacks of indigestion, sometimes accompanied by vomiting.

Operated on January 3, 1912, at Bay Ridge Sanitarium. Appendix found adherent and presenting marked evidences of disease. A number of enlarged mesenteric nodes in the ileo-cecal region were found; two of the largest were removed, examined and found tuberculous.

Case III.—Sibyl A. W., 25 years old, U. S. A brother only had pulmonary tuberculosis; no other family history of it. For eighteen months the patient felt tired, had had a poor appetite and had lost flesh. Three months previous to operation she experienced some pain in the right lumbar region, and a little later, in the right iliac region. Soon after this she noticed that her abdomen was getting larger. She also observed that the skin of her face, neck, chest and abdomen was becoming much darker in color.

I first saw the patient on January 18, 1912. A diagnosis of tuberculous peritonitis with ascites was made. It was thought that the supra-renals might be the seat of the primary focus. Operation, January 19, 1912, at the Bay Ridge Sanitarium. Ten quarts of straw-colored fluid were removed. On exploration of the abdomen a tumor of considerable size presented in the ileo-cecal region; this was made up of the terminal three feet of ileum and cecum, the walls of which were greatly thickened. The appendix was also greatly thickened, hard as a whip-cord, and firmly adherent in the mass. Not removed. Numerous scars were seen in the walls of the intestines involved in the tumor showing healed ulcerations. Many of the mesenteric glands were enlarged and some were cheesy. The peritoneum was everywhere greatly thickened. Supra-renal glands and reproductive organs normal. Pigmentation of the skin of the entire body was very pronounced, especially of the face, neck and abdomen.

Case IV.—Edwin G., 20 years old, U. S. No family history of tuberculosis. Patient had always been delicate; from childhood had repeated attacks of indigestion, was under weight, and felt tired most of the time; had no inclination to enter into the usual sports of boys.

Two weeks before admission to the Bay Ridge Sanitarium he complained of pain in the right iliac region, which sometimes shifted to the umbilicus. A distinct tumor could be felt at McBurney's point. His temperature varied from 99 to 101 degrees F. Repeated blood-counts showed a moderate leucocytosis (12,000 to 15,000).

Just before admission to the sanitarium, his symptoms grew worse and it was decided to explore his abdomen. Operation, January 23, 1913. A sub-acute appendicitis was found as well as a mass of greatly enlarged, cheesy, mesenteric lymph nodes, which made up the tumor that was palpated before operation. Two of these glands were removed for examination, one of which had become liquefied and presented the appearance of walled-off, cold abscess. They were tuberculous.

It is probable that the symptoms in this case were due to the tuberculous process rather than to the appendix.

Case V.—Elizabeth T. H., 13 years old, U. S. No family history of tuberculosis. Gives a history of having had two mild attacks of appendicitis. Patient is poorly nourished; says she has felt tired for several years; has had no inclination to play or work during that time.

She was operated on at the Bay Ridge Sanitarium, September 20, 1913. A long adherent and chronically thickened appendix was found and removed. A number of large mesenteric lymph nodes were seen and felt, some of which were caseous. One was removed for examination.

Two months after operation this patient presented symptoms of lung involvement. A radiograph showed areas of tuberculosis through the lungs. I present to you the X-ray plate.

Case VI.—Charles A. T., 8 years old, U. S. No family history of tuberculosis. Always well and strong up to eight months before operation, since which time he complained of being tired, did not care to play, had occasional distress over the lower abdomen, was irritable, and had a poor appetite.

On October 10, 1913, a slight fever occurred, right lower abdomen somewhat rigid, with pain over McBurney's point. Blood count, L. 16,000, p. 66 per cent. Patient was kept in bed but no improvement followed; instead, the local symptoms became more pronounced. On October 12th, L. 14,500, p. 78 per cent. Operation, October 14, 1913, at Bay Ridge Sanitarium. The appendix was removed but was apparently normal. The mesenteric lymph nodes in the ileo-cecal region were enlarged and the mesentery of the terminal portion of the ilium was thickened and spotted with yellowish areas.

A mesenteric gland was removed for examination. This showed only simple hyperplasia. This patient's convalescence was slow; he has improved very little up to this writing.

Six Cases of Tuberculosis of the Ileo-Cecal Region Associated with Appendicitis.

By Earl H. Mayne, M.D.

DR. L. W. PEARSON, in opening the discussion, said:—"Regarding the point of origin, as to whether that be primary or secondary, I wish to cite the case of a boy upon whom I operated some years ago. He was about ten years of age. Excepting some colds his previous health had been good. Acute appendicitis was diagnosed, and the abdomen opened in that belief. The appendix was acutely inflamed, and very near it, in the mesentery were four or five,—I think five, enlarged lymph nodes. Two of these had undergone a cheesy degeneration. Six months prior to this attack the patient had obtained employment in New York as a messenger boy, and was in the habit of lunching almost solely on milk. The source of that milk we could not learn; but were disposed to hold it as the cause of his misfortune. His chest, and body generally was carefully examined for tuberculous foci; but none were found beyond the site of operation. The diseased glands, and the appendix were removed. He has been well since, with no tubercular evidence anywhere. This seems clearly a case of tuberculosis primarily affecting the lymph nodes, and extending later to the appendix.

DR. J. M. DOWNEY, in discussion, said:—"As I understand it where you have a general tubercular peritonitis of any particular organ, is it customary for that particular organ when removed to heal up and to have an uninterrupted recovery? I simply ask that question because it has been impressed on my mind that it is an unusual procedure to remove some particular organ in a general tubercular condition in the abdomen because I have seen some of them removed and I have seen where they have failed to heal and we have had fecal fistulas following such operation.

"I would like to know if I am correct in that, or if I am wrong I would like to be corrected, but I am of that impression."

DR. EARL H. MAYNE, in closing the discussion, said:—"In case 3 which we presented here, that of the young woman, the appendix was not removed. I felt that if the appendix were removed we should very likely get a fistula which wouldn't heal. I had an experience a few years ago with one of these cases where the appendix (a tubercular appendix) was removed; and the patient underwent nine operations afterward for closure of that fistula, but as far as I know, it never healed. I felt that in this particular case the lumen of the appendix was completely obliterated, and that there would be more danger in removing it than in letting it alone.

"In each of the other cases the appendix was removed.

"I have had quite a number of cases in which I suspected tuberculosis of

the mesenteric nodes where the cases didn't go to operation. I have no way of proving that those nodes which we could feel were tubercular in the non-operative cases, but I think that in view of the findings in these cases just reported, they were tubercular."

Cholelithiasis, with Complications.

By James C. Kennedy, M.D.

Case No. 1.—The patient. A Mrs. R., born in the U. S., 38 years, mother of five children. Family history negative.

Previous History.—For several years she has had attacks of hepatic colic and jaundice, with great frequency, and during the last six months has been seized many times with chills and attacks of vomiting, losing forty pounds in weight. She came to St. Mary's Hospital on March 12, 1913, and the operation took place on the day following. Nothing worthy of note was found in either the laboratory or physical examinations, although on palpation, pain was easily elicited over the stomach and gall-bladder.

Operation.—The Mayo-Robinson incision, under nitrous oxide and ether anesthesia, disclosed an almost sessile attachment of strong fibrous tissue between the anterior wall of the stomach—midway between the lesser and greater curvatures, and closer to the pyloric end—and the gall-bladder wall to its left, and somewhat below its upper fundus. This attachment was about one-half an inch in diameter. On dividing this a distinct opening was left at the upper angle of the stomach attachment. No opening, however, was found in the gall-bladder, but there was an apparently healed surface. At the lower angle of the stomach opening there was found a small, flat gall-stone, about one-quarter of an inch long, and perhaps one-eighth of an inch thick, imbedded in the wall of the stomach. It was necessary to dissect this stone out, as it was covered by some of the fibrous tissue which constituted the adhesions joining the two organs. The opening in the stomach was closed in the usual way.

The following conditions of the gall bladder and its ducts were discovered. Calculi in the organ proper and in both the cystic and common ducts. On opening the gall bladder, a stricture was found at its middle portion through which the point of the little finger could be passed; directly beneath this a large stone was felt. The stricture was dilated and an attempt made to force the stone through, which failed. The stone was then crushed, and the fragments removed. The stones in the cystic duct, being much smaller, were easily pushed out into the gall bladder, and then removed. In the common duct the stone was large and the duct considerably dilated; as it was not possible to push the calculus into the cystic duct, a Bozeman's forceps was introduced through the gall bladder into the common duct and held with the left hand, while with the right the stone was pressed firmly against the point of the instrument and broken in several pieces. Further manipulation in this way was thought dangerous, as indicated by a small perforation in the thin wall of the upper end of the duct, just below the distal end of the cystic duct. With the aid of a blunt-pointed scissors this perforation in the common duct was extended downward until an opening of sufficient size through which the fragments could be removed was made. The hepatic ducts being free, so far as we could determine, and a probe readily passed into the duodenum, the opening in the duct was closed with two banks of sutures over which three small Mickulicz drains were sutured with catgut, and brought out of the wound along side of the rubber tube sutured into the gall bladder for drainage.

The patient made a smooth recovery.

COMMENT ON CASE.

The large calculus which occupied the common duct and which necessitated the operation of choledochotomy for its removal, could not have permitted the passage of the several large stones, which occurred during one of the patient's severe attacks some weeks previous to the operation. In our opinion these stones escaped into the stomach by means of Nature's operation of cholecystogastrostomy, and thence through the pylorus into the intestinal tract. The intense pains and vomiting during the attack mentioned, followed by relief on the passage of the calculi by the bowels, together with the presence of a moderately tight stricture in the fundus of the gall bladder, led us to believe that the gall bladder must have been filled to its capacity with calculi, and that pressure necrosis not only set up an inflammation in the

gall bladder mucous membrane which finally left the stricture, but that at a dependent point on the thin walled gall bladder a slow pressure necrosis went on, giving sufficient time for protective adhesions to be thrown about the gall bladder and stomach, thereby not only saving the patient from a general peritonitis, but perfecting Nature's operation of cholecystogastrostomy. That stones passed through the opening is evidenced by the finding of the small stone in the wall of the stomach, as noted.

Had there been no stricture in the fundus of the gall bladder, and no imprisoned stone in the common duct, it is among the rare possibilities that Nature, in the desperate effort which she made in this case, might have cured the patient. I am suspicious that some of the unaccountable and remarkable cases of gall bladder disease which are pronounced cured by osteopathy and sweet oil, are brought about by Nature's cholecystogastrostomy, in some cases, at least. It would seem that Nature at times proceeds farther, as in this case—as no opening was found in the gall bladder, it is assumed that all the calculi that were not imprisoned escaped through Nature's cholecystogastrostomy, and when there was no further use for this opening it closed.

This case is reported somewhat in detail to impress what surgeons already know—that cholelithiasis, when diagnosed, should be operated on early, so as to avoid even more serious complications, perhaps, than have been noted here.

PARACENTESIS PERICARDII.

Case No. 2.—The patient, Fred. S., 17 years, school boy, a native of the U. S.

Father living, and well; mother died of tuberculosis. When two years of age a rib was resected for a left sided empyema. He was comparatively well up to the late winter months of 1912, when he developed a pneumonia on the left side, accompanied by an attack of acute Bright's disease. He recovered from his pneumonia in due time, but the Bright's disease continued. After this he developed a pericardial effusion, which later became purulent.

When Dr. Rauth and I saw the patient on March 11th his temperature varied between 103 and 104 degrees Fahrenheit. The heart's action was so weak that the sounds were scarcely discernible. He suffered acutely from dyspnea, and on the slightest exertion he was thrown into a condition of extreme exhaustion which was very alarming. On inspection over the precordial region the ribs and interspaces were unusually prominent. The details upon which the attending physician made his diagnosis of purulent effusion in the pericardial sac will not be given here; however, to confirm the diagnosis, we passed a needle and procured a small amount of pus. Taking all the complications into consideration an unfavorable prognosis was given. The problem to be solved was whether or no anything could be done to relieve the immediate distress which was, no doubt, produced by the apparently large pericardial effusion. The radical operation of removing a small section of the fourth and fifth rib over the most prominent part of the pus sac would undoubtedly have been the best surgery under different conditions—and, indeed, this was suggested to the parents and flatly refused, which rather pleased than displeased us. Under 1/5 of one per cent solution cocaine anesthesia, a medium sized trocar and canula was passed into the sac through the sixth intercostal space about two inches to the left of the median line. Fully a pint of moderately thick pus was drawn off, when the respiratory distress was almost immediately relieved.

On March 18th the same respiratory distress recurred. This time a very large canula was passed through the same point when more than a pint of sero-pus was withdrawn. Through the canula a rubber catheter, fenestrated at its extreme end was passed. The canula was withdrawn and the catheter left in place, and the pericardial sac irrigated with a weak solution of permanganate of potassium. Again the boy's respiratory distress was relieved. The heavy dressings placed over this drainage tube were changed twice daily by the nurse, and were thoroughly saturated with pus. The boy was, in this manner, relieved of his respiratory trouble until his death from the sum total of complications, which occurred April 1, 1912.

The points of interest in this case are two—(1) The rapid accumulation and the large amount of pus in the pericardial sac. (2) The temporary relief given on its removal—marking, under the circumstances, the justification of paracentesis pericardii.

BRAIN ABSCESS.

Case No. 3.—The patient, Elsie K., 12 years, born in the U. S., always in good health with the exception of an otitis media in the left side dating

from early childhood. For the three weeks previous to her entrance to St. Catharine's Hospital, which was on November 4, 1912, she had complained of a painful swelling behind the left ear. Examination showed a painful, fluctuating tumor just over the left mastoid process. P. 104, t. 100.

On the evening of November 4th, the tumor was opened. The usual mastoid incision being observed, a large quantity of thick creamy pus escaped. A careful search failed to disclose a bony opening in the mastoid antrum; it was decided, nevertheless, to explore, and the antrum was entered in the usual way. No pus was found and the wound was drained, but the child did not improve. For two days pulse and temperature remained about the same. On the evening of November 6th, the child became very restless, and the temperature rose to 103, pulse 140, and remained this way until the morning of November 8th, when the temperature rose to 104.6, and then gradually fell until at 11.40 P.M. on November 9th, it became normal. The pulse, though normal in count, was weak.

Both pulse and temperature fluctuated between normal in the morning and p. 90, t. 100, in the evening. This continued until November 12th, when the patient had some twitching of the face, particularly on the left side, which lasted a few hours, the pulse dropping to 70. On the evening of November 22d, the patient vomited a large amount of green fluid, and complained of pain over the left eye; p. 80, t. 99. These symptoms continued at intervals until November 24th, when the pulse dropped to 60, and was at times as low as 40; the patient frequently screamed with pains in the head. On November 26th the leucocyte count was 21,800, and the polymorphonuclears 69 per cent.

In the intervals of pain she had mental dullness; several convulsions occurred at various periods; motor aphasia, with facial paralysis on the side affected; hemiplegia, in a slight degree, on the opposite side, with optic neuritis.

A diagnosis of brain abscess being concurred in both by the neurologist and the oculist, the patient was again operated on, this time for brain abscess. The bone entrance previously made was extended upward into the squamous portion of the temporal bone; the dura was incised over the temporo-sphenoidal lobe, when an encapsulated tumor, the size of a large hickory nut, presented itself. Intracranial pressure immediately brought this out of the brain substance. On incision the tumor was emptied of nearly a drachm of thick, creamy pus, and as much of the capsule removed as was possible. This tumor was located in the left temporo-sphenoidal lobe, and probably occupied the first temporal convolution. The abscess cavity was swabbed with iodoform powder, and drained with gutta percha tissue.

Five months later the child's mother complained that she was more or less mentally deficient, but from that time on she has continued to improve, until, at the present time, she has taken her place in her classes at school, and her teachers have no complaints to offer.

ACUTE PANCREATITIS.

Case No. 4.—The patient, Mrs. G., born in the U. S., 34 years, housewife, mother of two children, younger two years of age.

Previous History.—Four years ago the patient was seized with a severe attack of gallstone colic which left her very ill for several days. She had been well from that time until May 22, 1913, when, after eating a hearty meal, she suffered from severe pains in the region of the stomach. No blood by mouth or bowels. Examination showed a strong, well-developed, but over-fat woman. Abdomen soft, but in the epigastric region painful in the extreme. No pain in the gall bladder region. No jaundice; trace of albumin present in the urine; all efforts to move the bowels were futile; pulse 90, temperature 99. While perforated gastric ulcer was thought of, acute pancreatitis in mind.

Operation.—Soon after arrival at the hospital the patient was operated upon. Median incision above the umbilicus; on entering the peritoneal cavity, an abundance of sero-sanguinous fluid with particles of fat floating in it, was much in evidence. The omentum was covered with patches of fat necrosis. Gall bladder was found filled with calculi and well drawn up under the liver. The head of the pancreas was found swollen. Where the gall bladder was incised, there was much blood, but no bile that we could notice; about forty stones large and small were removed, together with a large calculus from the cystic duct, the removal of which gave us much trouble. The gall bladder was then drained, and the peritoneal cavity thoroughly irrigated with normal saline and also drained.

Patient admitted to the hospital May 25, 1913, and discharged July 9, 1913, in good health.

Doctor Deaver, Philadelphia, compiles a statistical list of operations done for acute pancreatitis by well known surgeons throughout the world in a given period.

Surgeon.	Total.	Recovered.	Died.	Mortality Per Cent.
Balch (1910)	15	5	10	66
Bode (1911)	5	1	4	80
Borelius (1911)	8	4	4	50
Bornhaupt (1907)	3	1	2	66
Deaver (1912)	11	5	6	54
Dreesman (1911)	11	6	5	45
Elosser (1908)	7	3	4	57
Frank (1912)	9	1	8	89
Keefe (1910)	7	2	5	71
Korte (1911)	38	18	20	53
Mettin (1912)	22	6	16	73
Moynihan (1911)	11	7	4	36
Robson (1911)	10	7	3	30

A report of these cases, therefore, brings again to our notice a surgical disease that is now recognized by surgeons as having a mortality, the highest, perhaps, in the surgical category.

DR. L. W. PEARSON, in discussion, said:—"I don't want to take up the time of the Society, but there is a point that was of so much assistance to me that I can not let this opportunity pass without bringing it to your notice. I was operating upon a very old woman for gallstones. She had been sick several days, and her condition was desperate. The gall bladder and tissues adjacent were so adherent that nothing could be made out. Time was very precious; the scene puzzling. It occurred to me a finger introduced through the foramen of Winslow, might extricate me from my difficulties. On putting it into execution the gallstones were at once detected. Lifting the gall bladder with that finger brought it within easy reach, permitting a rapid conclusion of the operation. I would like to know if any other here has ever used that means to locate the gall bladder."



ROSTER OF MEMBERS

Corrected to August 1, 1914

ACTIVE MEMBERS

BOROUGH OF BROOKLYN, KINGS COUNTY.

A

Ackerman, Stephen H.....742 Union St.
Addoms, Lewis P.....278 Halsey St.
Adlerman, Louis 400 Rockaway Ave.
Adlerman, Theodore Davis..910 St. Johns Pl.
Ager, Louis C.....137 Clinton St.
Albers, Frederick M.....513 Forty-eighth St.
Allen, Herbert C.....171 Lefferts Pl.
Allen, William T.....693 Park Pl.
Anderson, Alexander L.....467 Ninth St.
Anderson, Charles A.....438 Third St.
Anderson, Herbert C.....241 Sackett St.
Anderson, Lewis N.....526 Bedford Ave.
Anderson, Samuel F.....763 Union St.
Andrew, James H.....500 Madison St.
Arrowsmith, Hubert 170 Clinton St.
Aten, William H.....71 Gates Ave.
Atwood, A. Dalton 980½ De Kalb Ave.
Abbott, William Henry.....1242 Pacific St.
Aronson, Henry 496 14th St.
Antonowsky, Benjamin S....423 Miller Ave.

B

Brockway, Perle B....629 Eastern Parkway
Bottano, Gaetano 334 Clinton St.
Bailey, Fred De Forest...260 Hancock St.
Baldwin, L. Grant 28 Schermerhorn St.
Baker, John L.....699 Putnam Ave.
Barber, Calvin F.....57 South Oxford St.
Barber, Robert F.....191 Lefferts Pl.
Barber, Vincent 269 Arlington Ave.
Barber, W. Howard 905 Union St.
Barnes, Harold L.....42 Elton St.
Bartley, Elias H.....65 South Portland Ave.
Bartruff, George L.....473 Evergreen Ave.
Bates, Sherman W.....313 Wyckoff Ave.
Bayles, Havens Brewster...125 Seventh Ave.
Bayles, William H.....1901 Bedford Ave.
Beach, Ralph M.....69 Seventh Ave.
Beasley, Crawford D.....702 Greene Ave.
Beatty, George W.....204 Hancock St.
Beck, Albert W.....108 Garfield Pl.
Beers, Nathan T.....97 Gates Ave.
Beery, Edwin M.....118 Gates Ave.
Bell, Alfred 559 Decatur St.
Bell, Harold K.....825 President St.
Bell, Robert J.....304 Warren St.
Bellows, Charles H.....433 Nostrand Ave.
Benanti, Salvator 153 President St.
Benton, Stuart H.....877 Sterling Pl.
Berendsohn, Rudolph 946 73d St.
Berleibach, Philip H.....9 Stuyvesant Ave.
Birmingham, Francis H....120 Montague St.
Bernauer, Emil C.....357 Hancock St.
Bierbauer, Bruno W.....47 Pierrepont St.
Bierwirth, Julius C.....253 Henry St.
Blackman, William W.....519 Clinton Ave.
Blackmar, Bruce G.....317 Ovington Ave.
Blaisdell, Silas C.....500 Bedford Ave.
Blake, Edward L.....1565 44th S.
Blake, James Eddy.....352 Jefferson Ave.
Blatteis, Simon R.....596 Willoughby Ave.
Block, Siegfried 848 Greene Ave.
Bliss, R. Franklin 23 Seventh Ave.
Bodkin, Dominic G.....897 Lafayette Ave.
Bodkin, Martin L.....290 Clinton Ave.

Boes, William 200 Graham Ave.
Bogart, Arthur H.....27 Seventh Ave.
Bogart, J. Bion 463 Clinton Ave.
Bonner, Adolph 421 Grand Ave.
Bookbinder, J. 76 Suydam St.
Bozenhardt, William F.....50 Forest Ave.
Brader, William B.....1198 Bushwick Ave.
Bradner, Frank W.....82 Saratoga Ave.
Braislin, William C....556 Washington Ave.
Brennan, Thomas M.....213 Carroll St.
Brinckerhoff, Walter J..180 Willoughby Ave.
Brinsmade, William B.....117 Montague St.
Brockway, Robert O.....67 Hanson Pl.
Brodhead, Charles W.....561 Bainbridge St.
Brodhead, William F.....261 Bainbridge St.
Brown, Frank E.....591 Hancock St.
Brown, Thomas E.....278 Clinton St.
Browne, Waldemar T.....62 Rugby Rd.
Browning, William 54 Lefferts Pl.
Brundage, Albert H.....375 Gates Ave.
Bruning, Henry F.....467 75th St.
Brunner, Charles W.....103 Wilson St.
Brush, Arthur C....29 South Portland Ave.
Brown, Charles A.....155 Halsey St.
Bornmann, Alfred 438 Greene Ave.
Bryn, Harold 313 Union St.
Bullard, Edward Arthur....354 Ocean Ave.
Berendsohn, William A....598 Carlton Ave.
Bell, Harry E.....859 Sterling Pl.
Buist, George L.....3 Hancock St.
Bull, Robert I.....46 Fourth Ave.
Burford, Mortimer G.....198 Marcy Ave.
Burger, Francis J.....41 Buffalo Ave.
Butler, Glentworth R.....226 Gates Ave.
Butler, William E.....113 Halsey St.
Buys, Thomas A.....707 St. Johns Pl.
Bedford, Edwin R.....352 Hancock St.
Blum, Samuel G.....685 Bushwick Ave.
Baumann, William Joseph ..120 Dykeman St.

C

Callaghan, David E.....180 Clermont Ave.
Callender, J. Meade.....172 Remsen St.
Cardona, L. John.....804 Lafayette Ave.
Cardozo, Abraham L.....635 St. Marks Ave.
Carpenter, Frank E.....688 Madison St.
Carr, Robert H.....922 Sterling Pl.
Cary, John J.....287 Hoyt St.
Cary, William H.....38 Clinton St.
Campbell, William Francis..394 Clinton Ave.
Campbell, Walter J.....384 Union St.
Candidus, Eugene W.....772 St. Marks Ave.
Catlin, Arnold W.....207 Greene Ave.
Chapin, Edward 21 Schermerhorn St.
Chapman, William L.....114 Lafayette Ave.
Chase, Walter B.....1050 Park Pl.
Claffey, M. Edwin..256 Prospect Park West
Clark, Frank H.....758 Putnam Ave.
Clark, George Armon.....348a Ninth St.
Clark, Raymond 310 Clinton Ave.
Clark, Tracy E.....85 Halsey St.
Cline, De Witt 1000 Church Ave.
Colgan, John J.....191 Nassau St.
Collins, Burnett C.....645 St. Marks Ave.
Collins, John J.....1349 Dean St.
Cohen, Louis Lippman...760 Bushwick Ave.

Cohen, Nathan 426 South Fourth St.
 Cornwall, Edward E.....1218 Pacific St.
 Cosgrove, James E.....764 51st St.
 Coughlin, Robert E.....428 47th St.
 Cox, Charles N.....257 Jefferson Ave.
 Crane, Claude G.....121 St. James Pl.
 Crane, Percy Radcliffe.....433 Greene Ave.
 Crawford, Frederick D....184 Joralemon St.
 Cross, Frank B.....832 President St.
 Cruikshank, William J...102 Fort Greene Pl.
 Campbell, Charles A.....98 Norman Ave.
 Cohn, Michael A.....458 Stone Ave.
 Carroll, Arthur L.....188 Adelphi St.
 Cleary, Thomas J.....369 First St.

D

Dangler, Henry W.....455 Classon Ave.
 Dattlebaum, Maurice J.....345 Stone Ave.
 Davidson, David 446 Pacific St.
 Davis, George H.....580 Halsey St.
 Davis, William D.....6929 Ridge Blvd.
 Davis, William Henry....158 St. Marks Ave.
 Dawson, Edward A.....921 Bedford Ave.
 De Coste, Stephen H.....170 Barbey St.
 Deeley, George E.....132 Montague St.
 Delany, John J.....1114 Avenue O
 Delatour, H. Beeckman.....73 Eighth Ave.
 De Long, William A.....170 Bainbridge St.
 De Lorme, Murrett F.....70 Greene Ave.
 De Mund, John E.....1740 Cropsey Ave.
 De Waltoff, Dayve 451 47th St.
 Dexter, Thurston H.....411 Hancock St.
 De Yoanna, Gaetano.....565 Henry St.
 Dickert, John G.....928 Bushwick Ave.
 Dickinson, Robert L.....168 Clinton St.
 Di Leo, Emanuele.....139 Montrose Ave.
 Ditmars, James G.....510 Ninth St.
 Dixon, Herbert S.....141 Lewis Ave.
 Dixon, Thomas 464 Pacific St.
 Dooling, John F.....943 St. Johns Pl.
 Dowd, James B.,

Ft. Hamilton Parkway & 42d St.

Downey, James M.....381 Clinton St.
 Doyle, Francis B.....145 Sixth Ave.
 Doyle, George J.....287 Clermont Ave.
 Duffey, Francis J.....148 Bay 16th St.
 Duffield, Warren L.....119 Berkeley Pl.
 Duggan, Homer V.....164 South Fourth St.
 Duncan, Cameron.....18 Clarkson Ave.
 Durham, Roger.....322 Park Pl.
 Durrin, William C.....1215 Dean St.
 Durkee, John W.....142 Clinton St.
 Dusseldorf, John E.....191 Lawrence Ave.
 De Nyse, Percy L.....681 Hancock St.
 Du Cret, Herbert Sperry....169 N. Y. Ave.
 Dukeshire, Phares James....498½ Sixth Ave.

E

Eastmond, Charles 67 Hanson Pl.
 Ehrhardt, Charles F.....146 Maple St.
 Eichacker, Henry F.....382 Covert Ave.
 Ellis, Thomas F.....447 State St.
 Enger, Anton 470 45th St.
 Enright, Maurice 903 Greene Ave.
 Erdmann, Adolph F.....458 Ninth St.
 Estabrook, C. R.....9307 Flatlands Ave.
 Evans, George A.....909 Bedford Ave.
 Engel, William 378 Bergen St.
 Ennis, William Murray.....31 First Pl.

F

Fairbairn, Henry A.....249 McDonough St.
 Fettes, David S.....1400 Avenue P
 Fielding, George B.....350 Ninth St.
 Figueira, Mathias.....14 Stuyvesant Ave.

Finch, William Y.....124 St. Marks Ave.
 Fisher, Charles M.....262 70th St.
 Fiske, Edwin Howe.....152 Lafayette Ave.
 Fiske, E. Rodney 1172 Dean St.
 Fitzsimmons, James Clelland...451 Gold St.
 Flannagan, James T.....361 Ocean Ave.
 Fleming, James W.....471 Bedford Ave.
 Fogarty, Thomas L.....262 New York Ave.
 Fowler, Royale H.....280 Jefferson Ave.
 Fowler, Russell S.....301 De Kalb Ave.
 Franciscus, Henry 718 Bushwick Ave.
 Fraser, Homer E.....18 South Portland Ave.
 French, Thomas R.....150 Joralemon St.
 Frischbier, Otto G.....691 Bushwick Ave.
 Frost, Samuel K.....254 Garfield Pl.
 Fry, Herbert Charles.....356 Ninth St.
 Fuhs, Jacob 871 Park Pl.
 Fulda, Carl 1096 Halsey St.
 Fulda, Harry C.....683 Bushwick Ave.
 Funk, Merton L.....654 East 17th St.
 Fisher, S. Lloyd 2911 Clarendon Rd.
 Freeman, William H.....263 Arlington Ave.
 Finklestein, Reuben ..1592 Eastern Parkway

G

Galloway, F. Maxwell.....1 Sherman St.
 Gardiner, Charles E.....27 Schermerhorn St.
 Geis, Norman P.....1325 Pacific St.
 Genthner, Philip J.....384 Court St.
 Gibson, Gordon 176 State St.
 Gildersleeve, Charles P..18 Schermerhorn St.
 Gillen, Andrew M.....4201 12th Ave.
 Gillen, William A., Jr.....294 New York Ave.
 Gilligan, Alexander.....404 Franklin Ave.
 Gilmartin, Albert E.....570 Leonard St.
 Gingold, David 119a Sumner Ave.
 Ginvico, Calogero 175 Central Ave.
 Given, James B.....463 Ninth St.
 Glynn, James 474 Ninth St.
 Goldstein, David.....533 Stone Ave.
 Goldstein, Max.....104 McKibbin St.
 Goodfellow, Eugene H.....5704 14th Ave.
 Goodrich, Charles H.....280 Park Pl.
 Gordon, Charles A.....596 Hancock St.
 Gordon, Mark 333 Stone Ave.
 Gordon, Onslow A.....71 Halsey St.
 Goubeaud, Henry J.....518 Carlton Ave.
 Graham, John Cooper.....317 73d St.
 Gray, R. Curtis 198 Greene Ave.
 Grant, Walter S.....380 McDonough St.
 Green, Edward Everett..456 Washington Ave.
 Griffin, Edwin Albert...340 Stuyvesant Ave.
 Griffin, John.....45 Lefferts Pl.
 Griffing, George P.....135 Milton St.
 Griffiths, Albert Fransworth..1055 Ocean Ave.
 Griswold, William Church,

88 Prospect Park West

Guenther, Theo. C.....881 Union St.
 Gaudet, Elzear Arthur.....781 Forest Ave.
 Garlick, Ralph H.....426 81st St.

H

Hagan, Cornelius E.....461 Ridgewood Ave.
 Hall, Charles H.....2113 Mermaid Ave.
 Hall, Gordon R.....163 Clinton St.
 Hall, Robert W.....750 E. 18th St.
 Hamlin, George D.....1260 Pacific St.
 Hancock, James Cole.....135 Cambridge Pl.
 Harnden, Frank.....67 Hanson Pl.
 Harrigan, John.....401 Clinton St.
 Harrington, Burt D.....525 Ocean Ave.
 Harris, Burton.....475 Greene Ave.
 Harris, Lewis.....1422 St. Marks Ave.
 Hartung, Emil F.....358 Marion St.
 Hawley, George R.....203 Gates Ave.

Hayman, Abe.....73 McKibbin St.
 Heeve, William L.....302 Sumner Ave.
 Hegeman, Thomas E.....2603 Newkirk Ave.
 Heiman, Max.....421 Grand Ave.
 Hendrickson, Skidmore.....1275 Bergen St.
 Henry, Charles C.....56 Clark St.
 Herriman, Frank R.....167 Quincy St.
 Herriman, Rudolph F.....1083 Bushwick Ave.
 Hermann, Solomon.....4903 Fourteenth Ave.
 Hettesheimer, Charles J.....309 Wyckoff Ave.
 Heuser, Gerard W.....560 McDonough St.
 Hewett, William B.....227 Clermont Ave.
 Hicks, Edward E.....1168 Dean St.
 Higley, Henry A.....184 Joralemon St.
 Hills, Rollin.....216 77th St.
 Hodges, Edward.....153 Halsey St.
 Hoffman, Henry F.....138 Prospect Park West
 Holden, Frederick C.....198 Lincoln Pl.
 Hopper, Magnus Tate.....379 Washington Ave.
 Horni, John.....272 Jefferson Ave.
 Horstman, August G.....1241 Hancock St.
 Howe, Alexander C.....40 South Oxford St.
 Hoxie, Edward H.....1 Hart St.
 Hubbard, William S.....1138 Bergen St.
 Hughes, Peter.....467 Bedford Ave.
 Howard, Tasker.....383 Clinton St.
 Hull, Allen.....1847 Benson Ave.
 Hulse, Clarence H.....83 Norman Ave.
 Hulst, Francis A.....1249 Dean St.
 Humpstone, O. Paul.....327 Washington Ave.
 Hunter, G. V. H.....319 73d St.
 Hussey, Augustus A.....295 Hancock St.
 Hyde, Clarence R.....242 Henry St.
 Hynes, Edward G.....80 Ocean Blvd.
 Helprin, Benjamin Edel.....1501 Eastern Pkway
 Hamlin, Cyrus.....102 Hancock St.

I

Ingalls, James W.....874 Lafayette Ave.
 Iszard, Walter R.....141 St. Marks Ave.
 Ives, Robert F.....8504 Twenty-second Ave.
 Iler, George H.....169 Hancock St.

J

Jackman, Luther T.....257 12th St.
 Jacobs, William K.....1509 Eighth Ave.
 Jacobson, Arthur C.....115 Johnson St.
 Jameson, P. Chalmers.....139 Montague St.
 Janson, Christian W.....949 Bushwick Ave.
 Jennings, Frank D.....53 Woodbine St.
 Jennings, John Edward.....282 Jefferson Ave.
 Jewett, Frederick A.....282 Hancock St.
 Jewett, William A.....380 Vanderbilt Ave.
 Joachim, Henry.....1 Brevoort Pl.
 Johnston, Charles L.....232 Hancock St.
 Johnston, Evan Melrose.....61 Richmond St.
 Judd, Albert M.....375 Grand Ave.
 Johnston, Reuben T.....615 Eastern Parkway

K

Kalvin, Henry M.....Avenue U & E. 15th St.
 Kasper, Gerard.....714 Macon St.
 Keep, J. Lester.....460 Clinton Ave.
 Keil, Peter A.....164 Arlington Ave.
 Kene, Joseph A.....64 Greene Ave.
 Kenna, Richard J.....103 Reid Ave.
 Kennedy, James Charles.....762 Willoughby Ave.
 Kenny, Eugene Joseph.....219 Prospect Pl.
 Kerr, Le Grand.....42 Gates Ave.
 Ketcham, George F.....378 Adelphi St.
 Kevin, J. Richard.....252 Gates Ave.
 Keyes, Frank Perkins.....83 Hanson Pl.
 Keyes, James J.....226 17th St.
 King, Samuel T.....351 Adelphi St.
 Kinne, William.....48 Fourth Ave.
 Koerner, William F.....154 Rodney St.

Konther, Adolph F.....184 Ridgewood Ave.
 Knause, B. Frank.....1076 Bushwick Ave.
 Kramer, Henry F.....262 Jay St.
 Kruskal, Isaac D.....842 Park Pl.
 Kuhn, George R.....122 Clinton Ave.
 Kessler, George L.....588 Bedford Ave.

L

Lack, C. Eugene.....692 Tenth St.
 Lange, Christian C. A.....67 Hanson Pl.
 Lange, Hugo.....1182 Dean St.
 Larralde, Pedro J.....214 Union Ave.
 Lawrence, Andrew W.....558 Bedford Ave.
 Lazarus, George F.....2105 Caton Ave.
 Leavitt, Emanuel Joseph.....728 Bushwick Ave.
 Lee, John A.....23 Revere Pl.
 Leonhardt, Herbert H.....784 Flatbush Ave.
 Licht, Louis Frederick.....65 Forest Ave.
 Lincoln, Harry W.....113 Hancock St.
 Linder, John.....1509 Eastern Parkway
 Linder, William.....889 St. Marks Ave.
 Lindridge, Edwin F.....292 Clinton Ave.
 Linehan, Harlan Edward.....74 Norman Ave.
 Lintz, William.....907 St. Marks Ave.
 Lippold, William Edward,
 221 St. Nicholas Ave.

Little, George F.....469 Clinton Ave.
 Lewis, Maurice, Jr.....404 58th St.
 Lloyd, Ralph Irving.....450 Ninth St.
 Loewe, Jacques.....71 McKibbin St.
 Londoner, Jacob.....662 Lafayette Ave.
 Long, John Hathaway.....1132 Bergen St.
 Longmore, John A.....158 Clinton St.
 Louria, Leon.....249 Hewes St.
 Love, Cornelius R.....167 Clinton St.
 Love, William Lathrop.....1112 Dean St.
 Lubrecht, Charles A.....966 Bedford Ave.
 Ludlum, Walter D.....362 Marlborough Rd.
 Luhrsén, Ernest F.....292 Greene Ave.
 Lutz, Stephen H.....284 Hancock St.
 Linvingstone, David.....323 72d St.
 Lyne, Frank F.....3041 Ocean Ave.
 Lyons, John J.....485 Clinton St.
 Louria, A. L.....122 Bainbridge St.
 Linder, Samuel.....1780 St. Johns Pl.

M

MacCoy, Cecil.....184 Joralemon St.
 MacEvitt, James M.....514 Ninth St.
 MacEvitt, John Cowell.....407 Clinton St.
 MacNaughton, Donald Stuart.....50 Gates Ave.
 Mack, C. F.....1340 Gates Ave.
 Macumber, John L.....291 De Kalb Ave.
 Maddren, William Harvey.....56 Sterling Pl.
 Mahr, George J.....98 Wilson St.
 Malament, Manasseh John.....101 McKibbin St.
 Malone, Joseph W.....8732 Twenty-second Ave.
 Manecke, Philip.....1058 Bushwick Ave.
 Mangan, Daniel Clarence.....95 Park Ave.
 Manley, Mark.....261 Mouroe St.
 Manning, Charles Edward.....480 Putnam Ave.
 Masterson, John Joseph,
 4721 Fort Hamilton Parkway

Matheson, A. Ross.....37 Seventh Ave.
 Matson, Nathaniel.....72 Brooklyn Ave.
 Mayne, Earl H.....139 Bay 17th St.
 McAteer, Daniel A.....4430 Eighteenth Ave.
 McCammon, Frederick J.....139 Decatur St.
 McChesney, Herman F.....138 Halsey St.
 McClelland, Lefferts A.....78 McDonough St.
 McCollom, William E.....756 St. Johns Pl.
 McCorkle, John A.....149 Clinton St.
 McCoy, James Edward.....561 Bainbridge St.
 McEntee, Edward James.....196 Hancock St.
 McGuire, Constantine F.....57th St. & 18th Ave.

McNamara, Sylvester James....369 Union St.
 McQuillin, John Parker.....414 58th St.
 Meeks, Frederick R.....100 Hancock St.
 Merzbach, Joseph.....204 Eighth Ave.
 Meyer, David W.....161 Clinton St.
 Meyer, Joseph.....216 Van Buren St.
 Michel, Leo L.....173 Hooper St.
 Miller, Francis H.....196 Arlington Ave.
 Miller, George I.....700 St. Marks Ave.
 Miller, Lewis H.....109 Halscy St.
 Mills, Henry M.....192a Sixth Ave.
 Mills, Richard M.....193 Fenimore St.
 Minton, Henry B.....165 Joralemon St.
 Moitrier, William.....454 Putnam Ave.
 Monaghan, Frank J.....1069 Bushwick Ave.
 Moore, Joseph Leslic.....175 Sixth Ave.
 Moore, Samuel Edward.....1332 Myrtle Ave.
 Moorhead, Robert L.....247 Madison St.
 Morgenthaler, Herbert J. W. 911 Bedford Ave.
 Morris, Edward J.....488 Ninth St.
 Morris, Harold Arthur.....163 Linden Ave.
 Morrison, Robert J.....1173 Dean St.
 Morton, Henry H.....32 Schermerhorn St.
 Morton, Lawrence J.,
 Fort Hamilton Parkway and 88th St.
 Moscs, Henry Monroc.....4 Lefferts Pl.
 Mosher, Burr Burton.....184 Joralemon St.
 Moxom, Philip W. T.....1807 Dumas Ave.
 Murray, Morrison Foster.....913 Union St.
 Murray, Patrick J.....478 Classon Ave.
 Murray, Harrison F.....408 Grand Ave.
 McAveney, William J.....134 Second Pl.
 Maxfield, Traverse Rocke.....855 President St.
 Morin, Jacob M.....1115 Bergen St.

N

Napier, Charles Dwight....100 Lafayette Ave.
 Nash, Philip Ingram,
 Neptune Ave. & Cortland St.
 Nevins, Thomas Francis.249 Cumberland St.
 Nichols, Carroll L.....232a Putnam Ave.
 Nichols, Louis Lee.....386 Stuyvesant Ave.
 North, Nelson L.....150 Hancock St.
 Northridge, Thomas H.....320 Cumberland St.
 Northridge, William A. 402 Washington Ave.
 Norton, Howard Le Roy.....565 47th St.

O

O'Connor, Charles G.....980 St. Marks Ave.
 Ohly, John H.....22 Schermerhorn St.
 Ostrander, George A.....61 Greenc Ave.
 Otis, F. Burton.....369 Hancock St.
 Owens, George C.....275 Kingston Ave.
 Ogden, George S.....641 E. 28th St.

P

Packer, Andrew D.....262 Hicks St.
 Paffard, Frederick C.....238 Clinton St.
 Paine, Charles E.....694 St. Marks Ave.
 Pallister, Stanley Wilson.222 Jefferson Ave.
 Pardee, L. Clifford.....168 Macon St.
 Parrish, John W.....111 Montague St.
 Parrish, Paul L.....1030 Bergen St.
 Pascual, William Vincent.690 St. Marks Ave.
 Perlstein, Maurice Barrett.....309 Hewes St.
 Pearson, Lewis Walter.....401 Union St.
 Pendleton, Judson Philbrook...91 Sixth Ave.
 Pentlarge, Victor Howard...380 Sterling Pl.
 Peterman, Charles P.....809 Greene Ave.
 Pettit, Henry S.....106 Gates Ave.
 Pettit, Stephen C.....Neck Rd.
 Pettit, William Randolph.....1225 E. 37th St.
 Pfeiffer, William.....368 McDonough St.
 Pflug, Charles J.....53 Stuyvesant Ave.
 Philleo, Willis H.....155 Herkimer St.

Pierson, William H.....101 McDonough St.
 Pilcher, James Taft.....145 Gates Ave.
 Pilcher, Lewis Stephen.....145 Gates Ave.
 Pilcher, Paul Monroe.....145 Gates Ave.
 Place, E. Clifford.....7 Hanson Pl.
 Plath, John Henry.....1207 Hancock St.
 Plotkin, Henry.....486 Stone Ave.
 Polak, John Osborn.....287 Clinton Ave.
 Pomeroy, Ralph H.....511 Nostrand Ave.
 Pool, William Pohlman.....166 Clinton St.
 Poole, John W. Voorhees Ave., nr. E. 18th St.
 Porter, E. Pender...1 Glenada Pl.
 Potter, Alfred.....491 Eighth St.
 Preston, Henry Green.....68 Greenc Ave.
 Price, Walter D.....202 Schermerhorn St.
 Price, William H.....801 Prospect Pl.
 Progebin, Abraham.....164a Tompkins Ave.
 Pullman, James.....155 Reid Ave.
 Pcake, Chester A.....210 Rutland Rd.

R

Rabinowitz, Harris M.....159 Watkins St.
 Rae, Alexander.....117 Henry St.
 Rankin, William H.....151 Hancock St.
 Raphael, Joseph.....100 Sixth Ave.
 Rappold, Julius C.....750 Flushing Ave.
 Rathbun, Nathaniel P.....442 Greene Ave.
 Rauh, Maximilian Thomas.15 Palmetto St.
 Rauth, Emil.....695 Lafayette Ave.
 Raynor, Frank C.....184 Joralemon St.
 Read, Henry N.....228 Clinton St.
 Read, John Sturdivant.....135 Clinton St.
 Reb, John H.....328 Jay St.
 Reed, George E.....737 Putnam Ave.
 Reed, James Erwin, Jr.....838 Park Pl.
 Ranken, John F.....852 Park Pl.
 Reeve, Arthur L.....420 Gold St.
 Reichers, George Henry..1411 Bushwick Ave.
 Reque, Peter A.....440 Clinton St.
 Reynolds, Willard G.....1165 Dean St.
 Richardson, Frank H....86 South Oxford St.
 Rickard, Wilbur L.....262 Stuyvesant Ave.
 Riggs, Herman C.....117 Montague St.
 Rink, Walter S.....160 McDonough St.
 Risch, Otto E. F.....495 Third St.
 Ritch, Orlando S.....78 Halscy St.
 Robert, Daniel R.....261 Hicks St.
 Roberts, Dudley D.....84 Remsen St.
 Robertson, Victor A.....834 Union St.
 Robinson, Emanuel M.....329 Bradford St.
 Robinson, Nathaniel.....89 Halsey St.
 Rogers, Hugh E.....102 Lewis Ave.
 Rooney, Alexander J.....307 Sixth Ave.
 Rose, Julius T.....128 Halsey St.
 Rosecrans, William Brink.1494 Greene Ave.
 Ross, Walter H.....215 Jefferson Ave.
 Rowan, John P.....115 Park Ave.
 Royce, Rupert S.....200 Greene Ave.
 Rushmore, Jaques C....477 Washington Ave.
 Russell, Julien W.....6 Plaza St.
 Ryan, Lorne McDonnell...61 Livingston St.

S

Salmon, Armond J.....166 Sands St.
 Sammis, George Frank.....65 Decatur St.
 Sanders, Harold Armstrong.864 St. Johns Pl.
 Sauer, C. Theo.....284 Sixth Ave.
 Schaffner, Philip M.....849 Park Pl.
 Schauf, Adam.....198 Vernon Ave.
 Schelling, Henry L.....264 Stuyvesant Ave.
 Schenck, Herbert Dana.....75 Halsey St.
 Schirmer, William C.....596 St. Marks Ave.
 Schlein, Julius.....382 Union St.
 Schlitz, Francis Augustus...28 Jefferson St.
 Schoenijahn, W. Carl.....822 Union St.

Schroeder, Frederick R., Jr. 26 St. Marks Ave.
 Schroeder, William.....339 President St.
 Schofield, Charles Edward.....72 Lee Ave.
 Scott, Peter.....126 New York Ave.
 Search, Charles J.....453 Franklin Ave.
 Searle, Marcus Fowler.....775 Washington Ave.
 Seimel, William A.....158 Halsey St.
 Shann, Herman.....207 Hart St.
 Sharpe, Frank Mansfield.....127 S. Oxford St.
 Shaw, Richard E.....Pacific & Amity Sts.
 Shea, J. Denton.....28 Prospect Park West
 Shearman, Robert W.....400 Ocean Ave.
 Shepard, William H.....415 56th St.
 Sheppard, John E.....130 Montague St.
 Sherman, David.....466 Ninth St.
 Sherman, Wesley.....336 Ninth St.
 Sherwell, Samuel.....33 Schermerhorn St.
 Sherwood, Walter Aikman.....289 Garfield Pl.
 Sibbell, Armin Joseph.....882 Bushwick Ave.
 Simmons, Warren S.....216 St. James Pl.
 Simmons, William.....23 Schermerhorn St.
 Simrell, George Wallace.....151 Hawthorne St.
 Skelton, Eugene W.....307 Sixth Ave.
 Slote, Samuel H.....75 McKibbin St.
 Smith, Archibald Delap.....159 Herkimer St.
 Smith, Edward J.....2016 Albemarle Rd.
 Smith, George H.....235 Hancock St.
 Smith, Henry Mitchell.....184 Joralemon St.
 Smith, J. Wheeler.....685 St. Marks Ave.
 Smith, William Sidney.....373 Washington Ave.
 Smylie, Arthur E.....132 Penn St.
 Snell, Howard B.....301 Clinton St.
 Somers, James Alpheus.....96 Greene Ave.
 Spence, Thomas B.....541 Third St.
 Steers, William H.....1251 Pacific St.
 Sterling, John H.....60 Greene Ave.
 Stern, Bernard.....2604 Avenue F
 Stevenson, Robert.....97 India St.
 Stewart, James Alexander.....1030 Bedford Ave.
 Stickler, Charles Waldo.....130 Montague St.
 Stoney, Frank E. A.....229 82d St.
 Stork, Louis.....337 77th St.
 Straub, George C.....35 Halsey St.
 Street, Herman E.....98 Brooklyn Ave.
 Strong, S. Meredith.....398 Franklin Ave.
 Sturges, Purdy H.....212 Garfield Pl.
 Sullivan, John D.....74 McDonough St.
 Sullivan, Raymond P.....208 Jefferson Ave.
 Sumner, Abraham J.....82 Debevoise St.
 Swan, Eugene La Forrest.....143 St. James Pl.
 Seidensticher, Richard F.....129 Lafayette Ave.
 Smith, Alvarez H.....382 Carlton Ave.
 Samenfeld, Joseph.....122 Pennsylvania Ave.

T

Tafel, Charles Francis.....212 Park Pl.
 Tag, Charles H.....284 Jefferson Ave.
 Talmadge, J. P.....L. I. College Hospital
 Tanner, Ernest Ketchum.....1042 Bergen St.
 Tarbox, Harry R.....1178 Dean St.
 Taylor, John M.....214 Eighth Ave.
 Taylor, Stephen L.....644 St. Marks Ave.
 Tenopyr, Joseph.....2915 Glenwood Rd.
 Terry, Walter R.....41 Linden St.
 Thall, Charles Sewell.....1122 E. 92d St.
 Thayer, Nathan P.....1433 Avenue H
 Thompson, James E.....223 Greene Ave.
 Thomson, Alec Nicol.....835 Park Pl.
 Throne, Binford.....2 Macon St.
 Thunig, Louis Albert.....1318 Bergen St.
 Tilney, Frederick.....161 Henry St.
 Todd, Joseph F.....402 Sterling Pl.
 Tong, George William.....429 Third St.
 Townsend, Palmer.....588 Jefferson Ave.
 Treadwell, George H.....64 South Portland Ave.

Truslow, Walter.....67 Hanson Pl.
 Tucker, Frank L.....464 Ninth St.
 Tupper, Charles O.....80 New York Ave.

U

Upham, Roy.....300 McDonough St.
 Ullrich, Robert L.....28 Stuyvesant Ave.
 Unger, Harry.....113 Harrison Ave.

V

Van Cott, Joshua Marsden.....188 Henry St.
 Van Sickle, Albert M.....545 54th St.
 Vaughan, Ernest M.....1223 Bushwick Ave.
 Vause, Frank C.....385 Franklin Ave.
 Virdone, Paolo.....657 Lorimer St.
 Vogt, Clarence B.....353 Lewis Ave.
 Voorhees, John A.....1740 Cropsey Ave.
 Vosseler, Theodore Luther.....390a Monroe St.

W

Wade, Henry Albert.....495 Greene Ave.
 Wade, John E.....103 McDonough St.
 Wagner, John G.....28 Seventh Ave.
 Waldie, Thomas Edward,
 4702 Fort Hamilton Parkway
 Wallace, Wesley H.....516 Ninth St.
 Walmsley, Robert F.....491 Putnam Ave.
 Walsh, Joseph W.....154 McDonough St.
 Warbasse, James P.....386 Washington Ave.
 Ward, Joseph Francis.....405 Tenth St.
 Warner, Alton G.....19 Schermerhorn St.
 Waterman, James Sears.....676 St. Marks Ave.
 Watson, Cassius Hinds.....474 Washington Ave.
 Watt, James.....174 Clinton St.
 Waugh, Darwin W.....388 Clinton Ave.
 Waugh, Henry H.....39 Schermerhorn St.
 Webster Henry Goodwin,
 364 Washington Ave.

Weed, Ver Nooy W.....1238 Halsey St.
 Wellbery, Edward Montgomery,
 218 Sixth Ave.
 Wessenberg, Paul Edward.....7 Linden Ave.
 West, Frank E.....184 Joralemon St.
 Westbrook, Richard W.....1145 Dean St.
 Wheeler, Robert Taylor.....887 Park Pl.
 White, Alfred Winfield.....360 Halsey St.
 White, Morris Gardner.....98 Gates Ave.
 Wight, J. Sherman.....30 Schermerhorn St.
 Williams, George Albert.....499 Hancock St.
 Williams, Herbert F.....416 Grand Ave.
 Williams, John G.....1136 Dean St.
 Williams, Ralph Clarke.....459 50th St.
 Williamson, Charles E.....841 Willoughby Ave.
 Willich, Charles J. M.....655a Greene Ave.
 Wilson, Edwin Barnes.....80 Fenimore St.
 Winfield, James M.....47 Halsey St.
 Wolf, Adam B.....968 Forest Ave.
 Wood, J. Scott.....172 Sixth Ave.
 Wood, Robert Lowell.....129 Hancock St.
 Woolsey, William C.....88 Lafayette Ave.
 Wright, Justus Gaige.....363 11st St.
 Wunderlich, Frederick William.....8 Sidney Pl.
 Wasch, Milton G.....960 St. Johns Pl.
 Warren, Luther Fiske.....161 Henry St.
 Weinstein, Samuel Z.....1880 Bergen St.
 Wolfert, B. E.....86 Prospect Park West

Y

Yerdon, Charles F.....1276 Herkimer St.
 Yeaton, Ralph I.....1171 45th St.

Z

Zimmer, Wilson B.....178 Woodruff Ave.
 Zimmerman, Victor L.....271 Stuyvesant Ave.

QUEENS, NASSAU AND SUFFOLK COUNTIES.

A

Adams, Robert A.....Whitestone
 Allen, S. Busby.....Patchogue
 Ambler, Alfred S.....College Point
 Ames, James S.....Babylon
 Anderson, Andrew J. 28 Stevens St., L. I. C.
 Auger, Adolph A. 215 Fulton St., Jamaica
 Auger, Henri M. 126 Willett St., Jamaica

B

Baker, William A.....Islip
 Baldwin, Lester Cass.....Bellport
 Barker, Herbert L.....Woodside
 Barnes, Irving F.....Oyster Bay
 Barnhardt, William Newton.....Central Islip
 Barry, John H. 153 11th St., L. I. City
 Baum, Joseph. 109 Gibson Pl., Far Rockaway
 Benjamin, Frank Everett.....Shelter Island
 Benjamin, John H.....Riverhead
 Bennett, Winfield Scott.....Patchogue
 Bloodgood, Joseph F.....Flushing
 Boettinger, Carl. 440 Ditmars Ave., L. I. City
 Bogart, Joseph H.....Roslyn
 Boorum, Hartley E.....Rockville Centre
 Borland, Harry L.....Lynbrook
 Bray, Dallas G.....Babylon
 Brennan, Francis E. 256 Barclay St., Flushing
 Bulson, Davillo N.....Rockville Centre
 Bumster, P. H. 36 Ely Ave., L. I. City
 Burnett, William J. 21 Jackson Ave., L. I. City
 Burns, Geoffrey Chas. Henry.....Central Islip
 Burns, James E.....Glen Cove
 Burns, Williams J.....Glen Cove
 Burns, Martin E. 426 Jackson Ave., L. I. City

C

Carman, Edwin.....Freeport
 Carter, G. Herbert.....Huntington
 Child, Frank S.....Port Jefferson
 Clarke, Louis V.....Far Rockaway
 Cleghorn, Charles D.....Garden City
 Cleghorn, Guy F.....Mineola
 Cocke, William I.....Port Washington
 Cole, Chester W.....Oyster Bay
 Combes, Abbott C.....Elmhurst
 Comstock, George Spaulding,
 1626 Woodhaven Ave., Woodhaven
 Cooke, Tyler Gibson,
 177 Elm St., Richmond Hill
 Cooley, James B.....Mineola
 Corcoran, David.....Central Islip
 Corwith, Silas R.....Bridgehampton
 Courten, Henry C.,
 32 South Johnson Ave., Richmond Hill
 Cook, William H. 2402 Silver St., Ridgewood

D

Davis, Milton B.....Patchogue
 De Lano, Frank T.....Rockville Centre
 Dietrich, Albert E.....Bay Shore
 Dildine, Frank C.....Port Jefferson
 Dold, William E.....River Crest, Astoria
 D'Orbessan, Fernand,
 1259 McCormick Ave., Ozone Park
 Doubleday, J. Stewart.....Shelter Island
 Doughty, Isaac L. 12 Vine St., Corona
 Dow, Horace D.....Maspeth
 Dowsey, George H.....Great Neck

E

East, Charles.....Eastport
 Edwards, David.....Easthampton

F

Faller, George W.....Oyster Bay

Fensterer, Gustav A.....Floral Park
 Finch, Frederic Arlington.....Amagansett
 Fincke, Harry Stark,

655 Academy St., Astoria
 Fisher, Henry Archibald,
 25 Bergen Ave., Jamaica

Flemming, Edward A.,
 213 Maple St., Richmond Hill
 Fletcher, Frederick W.....Freeport
 Folger, Rupert.....Whitestone
 Foster, J. Mansfield.....Valley Stream
 Foster, W. E.....Babylon
 Fowler, P. Van Benschoten, Centre Moriches
 Frey, Walter G. 205 Grand Ave., L. I. City
 Friedman, Edward Louis,
 11 N. Fairview Ave., Rockaway Beach
 Freitag, John Daniel,
 9 Waterbury Ave., Richmond Hill

G

Gibson, Horatio Gates, Jr.....Central Islip
 Gibson, William B.....Huntington
 Gilbert, Edwin C.....Bridgehampton
 Goldberg, Abraham,
 624 Boulevard, Rockaway Beach
 Goodwin, Norman C.,
 3308 Stewart Ave., Richmond Hill
 Gray, Hugh Barr. 211 16th St., College Point
 Grimmer, Ray D.....Hempstead
 Guarino, Francis Louis,
 Broadway & Park Pl., Woodhaven

H

Hadley, William Wallace.....Sea Cliff
 Hala, William Wendell,
 763 Second Ave., Astoria
 Hall, James S.....Oyster Bay
 Hallinan, Joseph D.,
 29 Lefferts Ave., Richmond Hill
 Halsey, Bruce Frary. 47 Union Ave., Jamaica
 Halsey, Hugh.....Southampton
 Halsey, James L.....Islip
 Harrison, Daniel A.....Whitestone
 Hartranft, Joseph M.....Southold
 Hatton, Henry C. Wicks St., Morris Park
 Hawkes, Forbes.....Port Washington
 Hendrickson, Samuel. 46 Bergen Ave., Jamaica
 Hewlett, Harold E.....Babylon
 Heyen, John P.....Northport
 Higgins, Aaron L.....Rockville Centre
 Houghton, Harris A.....Bayside
 Hulse, William A.....Bay Shore
 Hutcheson, J. Ensor.....Rockville Centre
 Hyman, Marcus B.....Central Islip

J

Jaques, Arthur D.....Lynbrook, L. I.

K

Keays, Frederick L.....Great Neck
 Keet, Ernest E. 40 Flushing Ave., Jamaica
 Kerrigan, Joseph A.....Hempstead
 Kindred, Joseph A. River Crest, Astoria
 Kittell, Martin M. 101 Herriman Ave., Jamaica

L

Lanehart, Louis Nott.....Hempstead
 Lawrence, Enoch P. 147 Amity St., Flushing
 Lehman, Max. 134 Edsall Ave., Glendale
 Lewis, David R.....Whitestone
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SYMPOSIUM ON HYPERTHYROIDISM. PHYSIOLOGY OF THE THYROID.*

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THE various views occurring from time to time regarding the function of the thyroid gland adhere closely to the contemporaneous conception of the glands in general. Thus, before the views of the endo-secretory organs were well outlined, the glands without noticeable ducts were conceived to have a function similar to that which we hold now for the spleen; and thus, the earlier theories of the thyroid held that this gland acted as an expansive and contractile organ so that the blood passing to the brain might have a so-called by-pass, by means of which any excessive amount when taken to the brain, might be drained off by means of the thyroid expansion. That view, of course, has long since been neglected.

When our knowledge of the glands of internal secretion increased somewhat, there made its appearance a second theory which was called the antitoxic theory. This hypothesis held that certain supposedly toxic substances circulating in the blood were picked out by the thyroid gland. The gland then worked them over and by means of the iodine, which at that time was first known to be present in the gland, saturated these substances in a way somewhat similar to that by means of which the unsaturated fats become saturated by iodine. These toxic substances, having been saturated by the iodine, became non-toxic, this action taking place in the cells of the gland. When that had occurred the non-toxic product was then thrown back into the blood and supposedly excreted.

The third theory which I will mention was the logical outcome of further advance in our knowledge of internal secretions. This was an addition to the antitoxic theory, in that the substance active in the process was supposed to be a secretion. At that time the true import of endo-secretion was just making its appearance and, naturally, the knowledge was applied to the thyroid gland. This theory held that the substance (supposedly the secretion of the thyroid) was thrown into the circulating blood and there in the blood acted to neutralize the toxic substances in a way somewhat similar to that we now assume the antitoxins neutralize toxins. The toxins were supposed to be circulating in the blood and the thyroid secretion brought about the neutralization in the blood itself.

* Read before the Brooklyn Pathological Society, December 11, 1913. Stenographic report corrected by author.

That conception still holds in some quarters, but in the light of recent investigation we have gone one step further and have applied to the whole subject the view which is now current and which we call the working hypothesis of chemical correlation. This I will attempt to explain.

We know that the various parts of the body are integrated by means of the nervous system. This means of integration of the whole body is a later development in the course of evolution, and appeared as a result of phylogenetic development. The older method of integration occurs by means of chemical substances circulating around through the blood. Those substances have recently been given the name of hormones. A hormone is a substance produced in the cells of one gland and thrown into the blood stream directly. This substance then circulates around through the various organs and tissues, is picked out by some one or more other tissues and brings about in the cell its specific effect. You will see, therefore, that this arrangement brings about a chemical correlation, a correlation of one organ or tissue with the others, which is of great value and very essential for the orderly sequence and relation of the various chemical processes in the body. It may be expressed in a rather complicated way, but perhaps you will see the simplicity of it by an example. If we have an excessive contraction of a muscle or a set of muscles we know that there is always a sequence of events; the first thing that happens is, the production of lactic acid, carbon dioxide and similar products which are eliminated into the blood. These substances circulating in the blood reach the medulla and initiate the following phenomena: In the first place, there occurs increased respiration following excessive work or muscular effort. In other words, there is a stimulation of the respiratory center. Then we have an increase in the activity of the heart. It beats more rapidly. That is brought about by a stimulation of the accelerator center. Finally, a vaso-dilatation makes its appearance. The amount of blood flowing to that excited muscle is increased and that is the result of a stimulation of the vaso-dilator center.

Three things happen, then, coincident with muscular work, and they are all adaptive in the sense that they bring about, accentuate and aid the work of the original organ. Now, in an analogous manner, we assume the thyroid to act. Here is an organ (endo-secretory), whose secretion, if there be one, is thrown into the circulating blood. That secretion circulates through the body and other organs, selectively absorb it, and as a result they are either stimulated or inhibited. This secretion may pick out the pancreas, for example, and inhibit its effect, or again, it might stimulate the adrenals or chromaffin system to increased activity.

In order that we may see this more concisely, I want to run over rather briefly the various effects that we obtain in the various organs of the body as a result of either a hyperthyrosis or a hyperthyroidism on the one hand, and hypothyrosis or hypothyroidism on the other.

If we consider the true hypo conditions, that is, the removal of the thyroid, you will see the following effects:

You understand that this hypothesis may be considered either clinically, in cases where the secretion is diminished, or it may be studied as the result of extirpation of the thyroid. I am excluding entirely the parathyroids, and although they are very closely related, we will not have time to discuss them tonight.

The first group which we will discuss as the result of the removal

of the thyroid is the effect on the adrenals. We find, as the result of that, a diminution in the mydriatic power of the blood; that means, or we assume it to mean, that the secretion of the adrenals is diminished. The result will be, of course, a diminution in the general tonicity of the body, general velocity of the blood stream and a decrease in blood pressure, and lack of tone of the muscular system.

Those are some of the symptoms which we do notice in cretinism, myxœdema and infantilism which we believe to be the result of a diminution or the lack of thyroid secretion. You see, however, that it is an effect not of the thyroid directly, but an indirect effect through the adrenals.

The removal of the thyroid also brings about a compensatory hypertrophy of the pituitary. We see the results of these, as Cushing has shown, where the pituitary gland becomes enlarged. There make their appearance what he calls "neighborhood symptoms," following pressure on the optic chiasma, etc. These facts would indicate that perhaps the pituitary acted in a vicarious fashion with the thyroid; thus, in the absence of the thyroid, the pituitary attempts to take up its activity, and we know that the pituitary extract and the thyroid extract act in rather similar ways.

Next is the effect upon the sexual organs. That is, of course, very marked. We know that disturbances in thyroid diminution, as in the case of goitre, bring about very marked sexual disturbances, sexual perversion, infantilism, atrophy of the genitalia, etc. These are phenomena which we must ascribe to the removal of the thyroid gland, in that the stimulating effect which the thyroid secretion has on the various sexual organs is removed. As a result of the absence of that stimulating effect these organs pervert, degenerate or undergo atrophy.

Then the thymus. We find that the removal of the thyroid brings about an early atrophy of the thymus. We know so very little about the thymus that it is difficult for us to explain the matter in detail. However, we do notice that if the thyroids are removed in young animals the thymus atrophies and it disappears much more quickly than in normal animals.

The pancreas is said to be inhibited by the thyroid secretion. If, therefore, as in hypothyroidism, the inhibitory effect is removed, the pancreas acts excessively, and physiologically that shows itself in certain ways, namely, by an increased tolerance for sugar—*i. e.*, an increased ability on the part of the body to oxidize carbohydrates.

Now what is more perhaps to the point for the evening discussion is the reverse condition, namely, the effect of hyperthyroidism, brought about either as the result of hyperplasia on the part of the gland or following the administration of thyroid. In the case of the adrenals we see just the reverse condition from that stated under hypothyroidism. If we study the blood we find an increased mydriatic power. We also observe all those symptoms which result when the sympathetic system, or the autonomic system, which is the broader term, is stimulated excessively. What are the symptoms which we find most marked in hyperthyroidism, and especially in exophthalmic goitre? We have increased heart rate; that, of course, is a stimulation of the sympathetic accelerator fibers passing to the heart. We find high blood pressure; that is due to excessive excitation of the vasomotor nerves ending in the smaller arterioles. As the result of the general stimulation, there occurs a marked increase in metabolic activity, resulting in a tendency toward increased temperature, following which there would

naturally occur an augmented secretion of sweat. All these various symptoms which seemingly have no connection whatsoever and which we see grouped together as one specific syndrome, have a definite relationship, since they all follow as the result of the stimulation of the autonomic system, which is brought about in the way I have just outlined.

Then the gonads (the sexual organs). We find the well-known result that in those cases of infantilism where the thyroid (extract) is administered, the perversion is stopped and there is a tendency toward reversion to the normal condition. In other words, when you administer thyroid substance the gonads are brought into renewed activity as the result of increased stimulation from the addition of the thyroid.

In the case of the thymus, the relation of status lymphaticus to exophthalmic goitre is well known. Here there occurs an increased activity of the thymus as the result of increased stimulation of the thyroid; and that increase is a true increase, by which I mean it is a new formation of cells of the thymus rather than merely an enlargement.

With the pancreas we find the reverse. As I have mentioned before, the removal of the thyroid brought about increased carbohydrate tolerance. The reverse of that would be that the administration of thyroid extract would bring about an increased inhibition of the pancreas, exactly the same effect as if the organ were removed; this results in a glycosuria, and the mechanism for the production of the sugar which appears under those conditions would be explained in the round-about way just mentioned.

I have been compelled to rush over this phase of the subject which deals with chemical correlation and could only touch some of the high places, to indicate, perhaps, if I have not left anything else with you, the somewhat tremendous complexity of the matter; the fact that one gland, either by being removed or excited to increased activity, brings about effects all over the body in different localities and the result is a complexity of symptoms which varies according to the chemical processes involved.

Another vast matter which is perhaps better known consists in the question as to what the secretion of the thyroid really is. Baumann in 1895 was the first to show the presence of iodine in the thyroid, and investigations attempting to show the presence of this element elsewhere in the body have failed. Following that he attempted to isolate what he supposed was the active secretion of the gland. After rather heroic chemical treatment he prepared a substance which he called *iodothyron*, which was for some time assumed to be the active secretion. Immediately attempts were made to utilize this substance experimentally in the same way as the gland itself.

The glands were removed in animals and after the appearance of the symptoms indicating *hypothyroidism* *iodothyron* was exhibited in the hope of alleviating the disordered conditions. The results were inconclusive. In some instances it was found that the symptoms were removed and in others that the *iodothyron* was absolutely without any benefit. Perhaps we will see some reason for that. The percentage of the iodine in the gland, Baumann showed, was a very variable one, and while he had a maximum of 9 per cent, he noticed before he died that it was possible to have an apparently active gland with a very small amount of iodine. There are certain classes of animals without

any iodine whatsoever in the thyroid. The animals related to our domestic cat, the wild cat, etc., have no iodine present, and it has been noticed that herbivora have larger quantities of iodine than the carnivora. Immediately the assumption was made that it was the effect of feeding, and we now know that we can increase and decrease the amount of iodine in the gland by simply increasing or decreasing the amount in the food. It has been observed, in sheep particularly, those whose habitat is nearer the sea, that their thyroids have a larger quantity of iodine than those further away. There is a sort of isoiodo line similar to the isochlor lines. We know also only within the last few years, through the work of Marine and others, that dogs, especially those which were studied in Chicago, are very prone to spontaneous hypertrophy. The iodine in the gland varies markedly, and, as Marine has shown, this spontaneous hypertrophy occurring in dogs is due to a diminution in the amount of iodine in the gland. That seems to be enough to indicate that apparently the iodine is not the sole physiologically active factor, but that it must be associated in some way with the colloid present in the gland. The interesting fact in the case, however, is that it makes no difference whether the gland has little or much iodine, its removal brings about the same symptoms.

Marine, who was working with exophthalmic goitres, showed some rather important relationships, namely, that the amount of iodine varied inversely with the hyperplasia. That is very interesting. In other words, the iodine content decreased in the hyperplastic gland; in fact, the low iodine content of the gland was the causative factor in the production of the hyperplasia. Therefore, when you look at the pathological hyperplastic condition of the gland and say that it was excessively secreting, the conclusion may or may not be correct. Hyperplastic glands always revert, if left alone, to the colloid condition, and when that occurs there follows an increased amount of iodine. The iodine runs parallel, apparently, with the colloid under those conditions but inversely with the degree of hyperplasia. These statements may seem to complicate conditions very much.

That hyperthyroidism is the result of increased secretion of thyroid, has never been proven, although it is always assumed to be the case.

We might make a good many suppositions to explain the apparent discrepancy between the amount of iodine and of colloid in the gland and its activity; but those would seem rather out of place here, as they could only be of value as working hypotheses. But there is one thing to which I would like to call your attention and that is a point of considerable importance from the functional or physiological standpoint. It is always assumed that if we take out a gland and make an extract of it, or in the case of the thyroid if we examine it for its iodine content, the amount of iodine or the amount of secretion in the extract forms a criterion for the activity of that gland; and it has therefore been held that when the iodine is low the gland is not in active secretion.

If we examine the matter of the secretion physiologically we will see the error into which we may be led by such an assumption. Secretion is a double process, no matter where it takes place. The secretory substance must first be formed, that is, produced in the cell. If it remains in the cell the body gains no benefit; it will simply accumulate, and if that is all that is taking place then, of course, an extract of that gland would be a criterion for the activity of that gland. But that is only part of the

secretory process. The secretion after it is formed is eliminated into the circulation. This causes a decrease in the secretion content of the cell. Therefore, the two processes ordinarily run hand in hand. There is established a certain equilibrium in the cell. The amount which is formed is about equal to that eliminated or thrown into the blood, and the quantity which is present in the cell at any one time, therefore, remains roughly the same. We could have, however, two extremes which would show you the fallacy of our original assumption. The first would be that which I have just mentioned, namely, where there was no elimination into the blood, but where all the secretion was stored up, in the cell. Under those conditions if it was the iodine content which we were considering, we would have a large content of iodine in the gland, but absolutely no secretion whatsoever. Since no substances were eliminated into the blood, chemical correlation would be absent. There would be an error if we assumed that the amount of iodine represented the activity of the gland as related to its effect on other organs of the body. On the other hand, suppose the elimination from the cell was so rapid that it was impossible for the gland to make the secretion fast enough in order to store up any in the cell; in other words, just as soon as it was formed it was eliminated. Then you would have, if you examined the gland for iodine, practically no iodine whatsoever in the gland and yet that gland would be producing a marked effect on the body without any secretion remaining in the gland. The iodine analysis would be absolutely negative.

Such considerations give us a ray of hope in attempting to explain how it is that in the case of hyperplasia, for example, where we assume that we have active secretion, we find no iodine whatsoever. The only assumption necessary in those cases is, if the iodine or colloid which is passing under those conditions has anything to do with the secretion, as soon as it is formed it is thrown immediately into the blood. In those cases the thyroid cannot make it fast enough in order to keep any in the cell. It is eliminated immediately and consequently the amount present at any one time is minimum.

That brings us to the final thought, namely, that perhaps what we are considering as a primary disturbance is not primary at all. In other words, the thyroid effect which we notice in exophthalmic goitre may be secondary to some other primary disturbance elsewhere; and that is only a natural assumption, because the thyroid activity can be accelerated or inhibited indirectly by the secretion of other glands in the same way as it may act upon the others.

EXOPHTHALMIC GOITRE: ITS PATHOLOGY.*

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THE anatomical changes in exophthalmic goitre are manifold and according to most observers more or less variable. All agree, however, that the most common and most constant change is an active hyperplasia of the thyroid gland and lymphoid tissues. Undoubtedly minute changes of equal importance and constancy do exist in other organs, although they cannot be detected by our present methods of examination.

* Read before the Brooklyn Pathological Society, December 11, 1913.

THYROID GLAND.

Some observers, especially Wilson in his latest work, claim that there are certain definite changes which are specific for exophthalmic goitre; others that the changes observed are neither constant nor specific. A third, more conservative, view which seems to me to be established by the careful work of Marine and Lenhart is that glandular changes are for the most part constant, but in no sense specific.

PATHOLOGICAL ANATOMY OF THYROID GLAND IN GENERAL.

In order to get a clear view of the pathological anatomy of exophthalmic goitre let us first review briefly the pathological changes which occur in the thyroid gland in general. Indeed, this is necessary if we are to take a wide view of the subject as evidently the changes in exophthalmic goitre represent but one variable stage in the one fundamental cycle of pathological reaction of which the changes in other forms of goitre, myxœdema, etc., represent the other stages. And, indeed, this one characteristic reaction seems to be the only one of which the thyroid is capable, no matter what the cause be which gives rise to it, whether it be removal of a part of the gland, withdrawal of supply of iodine or the obscure and yet undetermined nutritional changes which lie at the basis of exophthalmic goitre and allied diseases. Briefly, all the changes can be regarded as stages or terminations of hyperplasia and hypertrophy.

This is essentially the same thing as the compensatory or regenerative hyperplasia observed after removal of a part of the gland. It embraces histologically an increase in parenchyma and stroma, an increase in number and size of the epithelial cells, of the alveoli, of the stroma, and as the change progresses the reproduction of tissue becomes more and more atypical, approaching the atypical reproduction of glandular tissue in malignant tumors. The morphology and arrangement of cells as well as of the alveoli are irregular and abnormal. As the tissue increases the stainable colloid decreases. In short the gland as a whole is becoming abnormal.

The whole cycle of reaction may be divided into three typical stages, each of which seems to correspond pretty constantly to a special clinical type of disease.

- I. Progressive, developmental.
- II. Regressive, involutionary (recovery)—(colloidal).
- III. Premature atrophic or exhaustion stage (myxœdema).

I. In the developmental stage the gland progressively grows more vascular, larger and softer. Histologically, the epithelial cells increase in number and size, gradually losing their normal cuboidal shape and finally assuming a tall columnar form. The alveoli become larger and new ones are formed, possibly by budding. The capsule and stroma show corresponding hyperplasia. The stainable colloid decreases as glandular tissue increases. Quite early in the process the alveolar walls begin to send papillary projections into the lumen after the fashion seen in intracanalicular fibroma. This process of invagination of the wall proceeds rapidly and progressively until the lumen is almost completely occupied by a mass of atypically arranged epithelial cells and stroma, as is seen in the most marked cases. This invagination of the wall is the

special feature of the change which some claim to be the specific pathological anatomy of true exophthalmic goitre.

II. In the involutionary stage the gland is returning to the normal, and the changes are the reverse of those in stage I. The gland becomes firmer in consistence, less vascular and assumes the normal color. The blood vessels undergo the same changes as in other involutionary organs, *e. g.*, uterus. The stainable colloid increases, the alveolar epithelium gradually assumes the cuboidal form, and the papillary ingrowths shed their surplus of cells, leaving no trace of their existence, excepting here and there a small projection of thin stroma covered by a single layer of normal epithelium. Now we have the picture of large alveoli with thin walls and distended with a deeply staining colloid. The change is not a degeneration, but a recuperation, the cured stage of active hyperplasia.

III. The premature atrophic stage is characterized by marked hyperplasia of the stroma, both inter- and intra-lobular at the expense of the alveoli. The epithelial cells undergo progressive atrophy, showing irregularities in size, shape and staining qualities. As the sclerosis proceeds the alveoli become compressed more and more until finally they lose all semblance to alveoli and appear as scattered, irregularly shaped nests of cells embedded in a dense fibrous stroma. This change is regarded by Marine as due to an exhaustion of cell vitality brought on by continued over-activity, without periods of physiological cell-rest, and is the pathological picture seen in myxœdema and cretinism.

These three stages, especially I and II, may alternate at short intervals of a few weeks or at longer intervals of months or years. The possible transformation of one into another in dogs has been shown by Marine and others. Thus removal of a portion of a gland will change II into I; feeding small doses of iodine to a cretin pup turns III into II and a later partial thyroidectomy transforms II into I.

Now which of these changes are associated with exophthalmic goitre? There are two quite different claims made: (1) According to the observations made by Marine and Lenhart, McCallum and others, all three of the above types as well as the normal gland are found in true exophthalmic goitre. Indeed, according to Marine, even if we give the most restricted meaning to the syndrome by making exophthalmos a necessary symptom this claim holds good, as this symptom was present in all types, including the normal, though not in all the cases in each type. (2) The other claim is that active hyperplasia with infolding of the alveolar walls, alone is found in true exophthalmic goitre. Wilson, as far as I know, is the only one who takes this view. In his latest work (Dec. Am. J. Med. Scs.) he claims that for the past three years all the cases diagnosed exophthalmic goitre at the Mayo Clinic from which gland tissue had been removed showed this special pathological condition. The number of cases observed was 949. Of course, Wilson takes the most restricted meaning of exophthalmic goitre, making, according to the suggestion of Plummer, exophthalmos a necessary accompaniment of the syndrome. He regards the different findings in his own previous work as well as in the work of others as due to inaccuracies in observation, both clinical and pathological.

If Wilson's claim was limited to the bare statement of anatomical fact, an agreement could easily be reached as the other side (as represented by Marine) are convinced from the evidence that active hyperplasia is present in the great majority of cases and that in the other cases the colloid, atrophic, or even normal gland found, did pass at some time through a stage of more or less active hyperplasia. But Wilson means more than this. He makes his claim in support of a theory, *viz.*, the hypersecretion theory. Active hyperplasia means hypersecretion and, therefore, must be present at the time the symptoms are active.

CHANGES IN OTHER ORGANS.

The changes in the thymus, spleen and lymph glands are as marked and as constant as those in the thyroid. The changes are identical with those found in status lymphaticus. The degree of lymphoid hyperplasia corresponds constantly to that of the thyroid and varies with the severity of the disease and post-operative mortality rate. I am told by Dr. Symmers that the combined statistics of Bellevue Hospital and of the General Hospital of Vienna show status lymphaticus present in 80 per cent of all cases of exophthalmic goitre autopsied. Whether this is an integral part of the disease or only a complicating factor has yet to be worked out. All that can be said now is that it is a most interesting association. The changes in the lymph glands are of the same nature as those in the thyroid, *viz.*, compensatory hyperplasia terminating in atrophy and sclerosis.

The changes in the nervous system as observed are not constant. It is believed, nevertheless, that there must be decided and most important changes too minute to be detected by our present methods of observation. If the methods of observation now being used in the investigations on "shock" were applied here we would probably get interesting results.

The heart hypertrophies in the actively hyperplastic stage of the thyroid and becomes smaller in the stage of involution. The hypertrophy seems to be identical with that of over-work. This is the primary change in animal and human goitre and is the simplest form of so-called "goitre heart"; the secondary changes in the valves, arteries, and myocardium so commonly found in exophthalmic goitre are probably of nutritional or possibly toxic origin.

The changes in the muscles are interesting, but have not been fully worked out. Atrophy and fatty degeneration have been observed especially in the muscles of the eye. This ocular myasthenia may be a main contributing factor in the production of exophthalmos.

The changes in blood are limited to the large mononuclears and lymphocytes. Van Lier gives the average count of mononuclears as 8 to 10 per cent; of lymphocytes 35 to 45 per cent. Extremes of 16 and 57 per cent have been reported. Marine found in his cases a close parallelism between the percentage of mononuclears and the extent of thyroid and lymphoid hyperplasia, and regards the blood examination, therefore, as the most accurate clinical means of estimating the extent and severity of the disease.

PATHOLOGICAL PHYSIOLOGY.

There are two predominant theories as to the meaning of these anatomical findings:

(1) Hyperthyroidism.

(2) That the disease is a nutritional disturbance and the changes in the thyroid and other organs are symptomatic, not causal.

We can discuss the relative merits of the two theories only very briefly.

(1) The most weighty evidence in support of this view is that gained from the results of: (1) Removal of a portion of the gland, and (2) feeding of thyroid extracts. In regard to the first there can be no doubt about a certain percentage of good results. Yet, granted that they are due solely directly to the removal of excessive tissue (which can be doubted) there is no logical proof that what takes place is a lessening of the thyroid secretion. We know, from the work of Marine and Williams that removal of one lobe of a hyperplasic gland causes reversion to the colloid or resting state. It seems quite possible then that some such change may occur in the remaining portion of the gland which restores to it its normal function as a balancer or fly-wheel in the body metabolism.

(2) It is claimed that ingestion of thyroid extract produces the syndrome of exophthalmic goitre. This is questionable. In most of the cases reported the most that can be said is that the symptoms produced are similar to some of the phenomena of the syndrome. In the few cases in which exophthalmos, Stelwag's and Graef's signs occurred, changes in the thyroid gland were also present. Thus in the case reported by Notthafft (1898) the gland was enlarged 3 c.m. The symptoms may, therefore, have been associated with the glandular changes as in true exophthalmic goitre and not due directly to the thyroid substances ingested.

A third proof of this view is taken from the so-called post-operative manifestations of hyperthyroidism. The rise of pulse and temperature immediately following operation are supposed to be due to flooding of the organism with thyroid secretion by manipulation of the gland. This is not tenable. The same manifestations occur when the gland is not manipulated as in the case of operations on other organs. Hirst collected 71 cases other than thyroid operations in which the same rise of pulse and temperature occurred and the Mayos also have called attention to the fact. Again the operative mortality is greatest in those cases with small cirrhotic glands and especially those with symptoms of myxœdema supervening on the exophthalmic goitre syndrome.

A strong argument against this theory of hyperthyroidism is the closely interwoven association of exophthalmic goitre with myxœdema. The two sometimes co-exist in the one case, and if one is a hyper, and the other a hypo-secretion this would be impossible. Again the two have many important conditions in common. In both there is lymphoid hyperplasia, increase in mononuclears and lymphocytes and a lowered resistance to bacterial infection. It has also been shown that there is a diminution of the complement in the blood serum in both (Marbé and Fassin), and also that this is the reverse of what obtains following the administration of iodine and desiccated thyroid.

If the theory of hyperthyroidism is true there ought to be some evidence of increased secretion. The evidence, however, as far as it goes seems to point the other way. The only means we have

of measuring the amount and quality of secretion is by estimation of its iodine content. Now, it has been demonstrated, beyond a doubt, that the iodine content varies inversely with the degree of active hyperplasia, the more marked the hyperplasia the less the iodine and as it approaches the normal the iodine content increases. But the advocates of the theory claim this as a point in their favor. The glandular epithelium has a reversible action, it can throw the secretion out into the circulation or direct it inwards and store it up in the lumen. In active hyperplasia they say it is directing nearly all the secretion into the circulation and consequently very little is found in the gland. But there is no evidence of this. On the contrary the hyperplastic gland seems to be thirsting for iodine instead of being prone to get rid of it. It has been shown conclusively that the ability of the thyroid to take up iodine is greatest in the hyperplastic form and the more marked the hyperplasia the greater its avidity for iodine.

Lastly, I think the histological picture speaks against this view. Similar pathological changes in other organs speak against it. With a similar type of hyperplasia in chronic hypertrophic gastritis we get a diminution of the true gastric secretion. The type of hyperplasia does not resemble in the least the physiological hypertrophy of the mammary gland during lactation; the picture is rather that of an intracanalicular fibroma of the breast, or an adenopapilloma of the ovary, in short that type of hyperplasia which in other organs we know to be accompanied by a great diminution, if not complete destruction, of physiological activity and secretion.

(2) In view of these considerations it would seem that the theory of hypersecretion is too simple and too narrow to explain all the observed facts. The experimental evidence seems to point to a wider view. Marine in his extensive investigations on the relations of iodine to thyroid changes and body metabolism was strongly impressed with their close similarity to those of iron and suggests the belief that exophthalmic goitre must be classed with the nutritional diseases such as chlorosis, rachitis, status lymphaticus, etc. According to this view iodine, the thyroid gland, body metabolism, stand in the same relation to one another as do iron, the red blood cell and metabolism. In exophthalmic goitre the disturbance of the thyroid "is insufficiency, its reaction compensatory and its significance symptomatic" (Marine).

THE CLINICAL MANIFESTATIONS OF PHYSIOLOGICAL HYPERTHYROIDISM.*

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New York City.

ONE might almost justly accuse me of a direct Hibernianism in announcing the title of "Physiological Hyperthyroidism." What I really mean to convey is that, as in many other conditions, not alone medical, but social, financial, and religious as well, good intentions, that is physiological ones, may readily become pathological in degree. I wish in the few moments which have been allotted to me this evening very briefly and somewhat

* Read before the Brooklyn Pathological Society, December 11, 1913.

discursively to call your attention not to the frank hyperthyroidism of exophthalmic goitre, for I am of that school firmly convinced that this disease is caused solely by hyperthyroidism; but to those minor manifestations which point in the direction of this disease without ever really developing into it. Of such are the formes frustes with which those of you engaged in general practice come very frequently in contact.

I am specially constrained to take this position because, as many of you know, the surgeon is now clamoring to operate on all instances of Parry's disease. But a very short time ago a very famous surgeon, a man of the greatest possible technical skill and of excellent surgical judgment, stated before the Academy of Medicine that if the surgeons could be allowed to operate on all undeveloped cases of hyperthyroidism, that is in very early or mild cases of Basedow's disease, 100 per cent of cures would result, and he strongly advocated this procedure as a routine measure.

Every man engaged in general practice, and particularly those who number on their lists many young women in the early years of adolescence from 16 to 24, sees numberless cases of this type which get well in most instances; in spite of treatment sometime, and because of it or with it at least in nearly all instances where the medical adviser is allowed to exercise his authority over the work, pleasures, diet, and general hygiene of this interesting and very important class of patients.

It is a well-recognized fact, almost an axiom, that enlargement of the thyroid gland, oftentimes with choking symptoms, or symptoms of constriction in the throat—a picture not infrequently attributed to simple globus hystericus—occurs in girlhood with great frequency, particularly at about that time when the menstrual functions are becoming firmly established, and when the mammary glands are undergoing rapid development, and when at the same time the fancies, the affections, the passions, and the temperament of the young woman are in the process of establishment. Precisely similar, though less striking signs appear in boys and young men.

Somewhat analogous conditions appear also during other epochs of a woman's life, during pregnancy, notably in the first weeks or months, and particularly in primiparæ. We frequently note in these cases tachycardia, mental irritability and excitability, tremor and nausea, which have but to become exaggerated to represent quite typical instances of exophthalmic goitre.

You may well argue that because these symptoms and signs arise together with more or less enlargement, for, of course, we all recognize that in pregnancy there is a very direct demand on the body of the mother for hyperthyroid secretion, therefore, we are not justified in assuming, as I apparently do, that the symptoms are the result of the hyperthyroid secretion, but that they are perhaps but a coincidental accompaniment of it.

This is, however, just precisely the charge to which I plead guilty tonight, and though I recognize that my ground is by no means fully proven, none the less I shall attempt to show you that we have a basis of fact on which to found my faith.

It is an old observation, expressed in many adages and saws, that you never fully appreciate the utility of any object until it

has been taken away. One of the most common of these is that, "You never miss the water until the well goes dry." This is in some circumstances also true of physiological conditions and those pathological states which are so very often but physiological conditions gone wild, overdone, as it were.

Perhaps, therefore, we can well illustrate the importance of the thyroid secretion in adolescence and youth by a study of those instances in which it is deficient or almost entirely lacking—it is, of course, well-known that when it is entirely absent, life is of but short duration.

Let us first consider the effects of hyperthyroidism on sexual evolution. It has long been proven that in experimental animals when the thyroid gland is removed, sexual development and differentiation fail to take place.

The same effect is observed in congenital human hypothyroidism; that is, in cretinism. The body fails to differentiate along natural lines, on the one side into that typical of the male, and on the other, into that of the female. The characteristics distribution of the hair, the evolution of the mammary gland, and the changes in the pelvic bones differentiating the sexes all fail to occur, or at least do not develop to a normal degree. Is it not quite conceivable that given a hyperthyroid secretion, exaggerations of development in these directions, both mental and physical, may occur? One frequently sees in practice young persons in whom an increased thyroid bulk is associated with sexual precocity both in mental and physical directions. Girls and boys in their very early teens become, under the stimulation of hyperthyroidism, in this particular men and women. Almost always in such instances, I believe, one will find also other evidences of hyperthyroid secretion, such as tachycardia, iodine intolerance, and various neuroses.

The interdependence between the sexual and thyroid gland secretions has also been a matter of common recognition for some time. It is out of place for us here with so brief a time at our disposal to enter into the abundant and extremely interesting literature of this subject. I wish tonight to call your attention to but a few very crude and commonplace illustrations of this complex relationship.

Compare, for a few moments, the effects of castration in youth with the characteristics of cretinism. Where the castration is performed in early youth and before the brain has become well-developed, the subject grows up fat, dense, and mentally torpid, the hair fails to develop normally, the configuration of the body remains of the neuter type—how very like this picture, is that of a cretinism from all standpoints, mental and physical.

Among the very most striking effects of hyperthyroidism are those of the mentality. In cretins of the most pronounced degree the mentality may never rise to even the grade of that of the lower monkeys and may rank far below that of such high types as the chimpanzee or orang. What a wonderful picture of therapeutic achievement it is when with the administration of thyroid these almost imbeciles become transformed into reasoning and reasonable human beings. The sluggishness of thought, moroseness, and melancholy of the adult sufferer from myxœdema under this drug also become transformed to normal psychic activities.

Now for our opposite comparison, which must lead us to a conclusion not quite so clearly and sharply demonstrated clinically but none the less definite and certain when viewed in comparison. When children are over-active mentally, when with this restless activity which may and very frequently does overstep the bounds of the physiological, and normal vivacity becomes petulance and irritability, natural self-assertiveness develops into egotism and profound selfishness, the possibility, nay more the probability of a hyperthyroidism must be considered. Normal wit and brilliancy become, with hypersecretion of the thyroid, irritability, irascibility, and active melancholy, which may progress to the grade of actual mental alienation.

Many such cases are characterized in addition to these mental peculiarities, by tremor, tachycardia, and even at times by exophthalmus, and quite commonly by iodine intolerances and thyroid hyperplasia. If doubt as to the dependence of symptoms of this class on hyperthyroid secretion still exists, the effects of the administration of thyroid gland will, in nearly all cases, cause a marked accentuation of the symptoms.

Such analogies may be carried on much further; indeed, I think I should have no difficulty in convincing most of you that there do exist in numerous patients frequent evidences of the normal action of the thyroid secretion carried on to the point where they verge on the pathological. Until such conditions result in actual tissue change, I think that it is wiser not to class them as examples of exophthalmic goitre or Basedow's disease.

Such instances include numerous other conditions such as we have indicated and which we meet especially in general practice. I believe them to be most satisfactorily classified as instances of physiological hyperthyroidism—the more definite and developed cases of which may well be included as *formes frustes* of exophthalmic goitre. The train of symptoms due to hyperthyroid secretions are very important, since their recognition and a proper interpretation of their origin and significance may and should direct us to adopt lines of treatment which do verily, I believe, defeat the development of true exophthalmic goitre.

In thus suggesting very briefly certain clinical aspects of thyroid hypersecretion, I wish to impress upon you that I in no way consider this in the nature of a paper, but simply as a suggestion in discussion of this general topic which I hope may lead some of you to look for and find these early and mild evidences of hyperthyroidism.

(For discussion see page 347)

ESSENTIAL HEMATURIA.*

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THE symptom hematuria is one common to many diseases of the genito-urinary system. Before the progress made in recent years in the examination and exploration of the bladder and kidneys and urinary passages the diagnosis of hematuria was often doubtful or impossible. To-day we are pretty well acquainted with the diseases

* Read before the Brooklyn Surgical Society, November 6, 1913.

causing this one symptom. Barring traumatism, some drugs and poisons, such as cantharides, turpentine, and constitutional or infectious disease, as congestive malaria, scurvy, hemophilia; we know that hematuria is often the initiatory symptom of tuberculosis of the genito-urinary tract and that in the course of the disease it is often a noted symptom. Tumors of various kinds and more specially malignant tumors in the different parts of these organs are a prolific cause of this symptom, it hardly ever being absent in the course of their development.

It is hardly necessary to mention the common association of this symptom with various forms of nephrolithiasis.

The use of the cystoscope, the catheterization of the ureters, the use of the X-ray, the chemical and microscopical examination of the urine and blood, the determination of the activity of the kidney by the excretion of chemical reagents, all these means have made it possible to determine in almost every case the cause and significance of hematuria. And yet this very ability that we possess in modern medicine to accurately determine the diagnosis of hematuria has brought out the singular fact that there are cases of blood in the urine in which, when everything is said and done, we must acknowledge the impossibility of determining the cause. These are the so-called cases of essential hematuria.

The literature of this class of cases is quite extensive, and since the first cases were reported by Rayer¹ and Socoloff the number of published cases has been quite large and the theories advanced to explain it have been numerous and ingenious.

First it was thought that this form of hematuria was due to nervous causes altering the blood supply of the organs and the calibre of the blood vessels. This angioneurotic hypothesis was adopted and advocated, amongst other prominent pathologists, by Broca² and Sabatier, and later presented under another form by Klemperer.⁵

About this time Senator³ advocated the theory that hemophilia was the cause of essential hematuria. In this he was supported by a number of cases published by Guthrie,⁴ Aiken and others advocating the same idea.

They seem to overlook the fact that essential hematuria is confined to one kidney, and patients suffering from it, even when very anemic from loss of blood, show no tendency to any other form of bleeding, nor is there any characteristic, either personal or inherited history. In 1907 Keersmäker⁶ first called attention to various forms of nephritis as the cause of essential hematuria and demonstrated for the first time tangible lesions in the kidneys to account for the disease. This was soon confirmed by reports of a large number of cases in which circumscribed nephritis in various forms was demonstrated.

Pausson,⁷ Israel,⁹ Laurent,¹⁰ Kretschmer,¹¹ Lower, and Casper⁸ are a few of the prominent writers and authors who have published series of cases in confirmation of this fact. Casper states that even when no casts or albumen can be demonstrated yet nephritis may be present. Lower and Richardson have both demonstrated under the microscope the lesions of nephritis in many cases of essential hematuria. So that at present it seems demonstrated that a great many cases of this disease are due to circumscribed nephritis in some form.

That this does not, however, explain all cases seems evident from the fact that no less an authority than Fenwick¹² of London has recently reported a number of cases in which the only lesion was an angioma of the papilla of the kidney. This was confirmed by ob-

servation and reports from Pilcher,¹³ Cabot¹⁴ and others. These observers seem to think that varices of papillary vessels were the only lesions found in their cases. In this connection it may be interesting to notice that Rousing and Israel, while admitting that nephritis is present in many cases of essential hematuria, yet think that the nephritis is originally produced by some infectious or toxic cause, and Albarran¹⁵ thinks that these lesions are sufficient to determine the vascular changes causing the hematuria.

It may then be said that the angioneurotic and hemophilic theories of essential hematuria have very little to support them in fact and that nephritis in various forms and degrees has been found as the demonstrated cause of essential hematuria in the great majority of cases. It is possible that the cases of angioma and varices of papilla may be explained by minute lesions of nephritis determining the dilatation of the vessels and the bleeding, as pointed out by Albarran and others. Such minute lesions may have been overlooked and future observers may be able to demonstrate them in cases of angioma of the papilla, thus establishing a common cause in all cases of essential hematuria.

Lately the claim has been advanced that hematuria may be caused by the invasion of the kidneys not only by bacteria but by autogenous toxic products. Elliot,¹⁶ Billings¹⁷ and Hale¹⁸ have reported cases in which the bacillus coli was obtained from the urine and one case in which toxic substances produced by indigestion seemed to have been the cause of essential hematuria. None of these cases can be classed as essential hematuria as they all presented other symptoms, as pyuria, albumen and casts, clearly pointing to nephritis.

The importance of these cases is in suggesting bacterial infection as a possible cause of hematuria and that in cases in which no other cause can be found one must think of this possibility, although in all reported cases other renal symptoms were present. In relation to this we must remember Kalzenberg's two cases, recently published. In both cases the urine was examined for bacteria and no micro-organisms found. In this connection it is interesting to note the experiments now being carried out by Tayne and Norfolk at the University of North Carolina. From experiments on dogs they have tried to determine whether hematuria could be produced by interfering with the nerve supply of the kidney, or by altering, or cutting off the blood current, or by injecting toxic substances into the kidney. These experiments are going on now and no definite conclusions have been reached so far, but it shows the great interest at present taken in this matter and the unsettled condition of the entire subject. In conclusion I will report a case of essential hematuria occurring lately in my practice as the occasion and excuse of this paper.

On the eighteenth of last April a man was admitted to the hospital under my care with the following history. He was twenty-eight years old and had been well up to one year ago. He does not remember about the diseases of childhood, but so far as he remembers was never confined to bed for any length of time. Denies venereal disease of any kind. Never was injured. So far as he can tell father and mother both died of old age and there is no history of carcinoma or tuberculosis in his family. For the last year he has passed blood in the urine every day. Has not suffered with frequent urination, burning pain or any other unpleasant feeling and says the presence of blood in the urine is the only trouble. On admission he is a rather large man, moderately nourished, markedly anemic. Tongue is clean, pulse compressible, about one hundred.

Physical examination of lungs and heart normal, with the exception of an anemic murmur at the apex and root of the neck. All abdominal organs normal. Kidneys cannot be felt. No tenderness or pain anywhere. Urine is the color of claret wine and there is no difference in color between the first and last urine. Passes water about every four hours and once during the night. Microscopical examination of urine shows large number of blood cells, some blood casts and bladder and renal epithelium. Cystoscopic examination show ureter and bladder normal and blood coming from one ureter. Urine from the other seems normal to the usual tests. X-ray plates show no enlargement of kidney, or any stone, or suspicious shadow. Phthalein test seems to show that the kidney that does not bleed, is in normal condition. Patient was put to bed and treated with iron and quinine and proper feeding in order to improve the condition of his blood before operating. At the end of one month patient's condition had improved so much that it was decided to operate, as during the past year he had received all kinds of treatment, both at home and in hospital and was gradually losing ground.

Under ether anæsthesia the kidney was exposed and delivered. It was somewhat congested, not enlarged and the capsule was not adherent. Kidney was split down to the pelvis and it bled so freely that a constrictor was put around pedicle. There was nothing abnormal to be seen or felt in any part of kidney and a catheter could be passed down into the ureter. As the kidney was inclined to bleed so freely and any further loss of blood would certainly endanger the patient's life, it was decided to do a nephrectomy as the surer means of cure. This was performed and the patient made a complete recovery and was discharged cured.

This is the report of the pathologist of the hospital, Dr. Francis A. Hulst:

The specimen of kidney from Mr. Ogally, St. Catherine's Hospital, has been received and histological examination shows the following results:

Kidney of moderate size, somewhat pale in color, capsule strips easily leaving a smooth surface.

Internal markings well seen on section, cortex about four to six mm. in width. A considerable amount of fat in the pelvis. In gross appearance there is no lesion present.

Sections taken from various regions subjected to histological examination show no lesion.

(For discussion see page 157.)

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3. Senator, *Ztschr. f. Urol.*, p. 400, 1907.
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8. Casper, *St. Batholomew Hosp.*, December, 1901.
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13. Pilcher, *Ann. Surg.*, Phila., May, 1909.
14. Cabot, *Am. J. M. Sc.*, January, 1909.
15. Albarran, *Ass. Fran. d. Urol.*, p. 104, 1900.
16. Elliot, *A. B. Internat. Clinic*, iv, sixth series, p. 122.
17. Billings, *Am. J. M. Science*, p. 625, 1910.
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SPLENOTOMY FOR ABSCESS OF THE SPLEEN.

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ONLY five cases of recovery after operation for abscess of the spleen had been reported up to 1894. Many successful cases have been reported since that time. Splenotomy for abscess is indicated when splenectomy is impossible on account of adhesions. In abscesses, however, adhesions are usually present to such an extent as to make splenotomy an operation of necessity. A spleen, the site of abscess, may be reached by one of three routes: An abdominal incision, a kidney incision carried more forward and more parallel to the ribs than the ordinary kidney incision, or by resecting the ninth or tenth ribs in the post-axillary line and going through the pleura and diaphragm. The incision should be made where the bulging of the tumor is most prominent as it is here that adhesions are more likely to exist. If an abdominal incision is used and adhesions have not formed to an extent sufficient to safeguard the abdominal cavity the peritoneum is protected by laparotomy sponges and an incision made through the splenic tissue, and into the abscess cavity by means of the thermocautery. Care and gentleness are necessary on account of the friability of the diseased spleen and because of its friability it is impossible to suture the edges of the spleen into the abdominal wound. The packing protecting the peritoneal cavity must, therefore, be made very carefully in order both to guard the peritoneal cavity and to promote adhesions. Whenever possible the operation should be done in two stages, first introducing packing to promote adhesions, and twenty-four to forty-eight hours later opening the spleen with the thermocautery. In many cases this will not be practicable as the spleen is already so broken down. In this event the parts surrounding the proposed incision are carefully packed, the spleen opened and the abscess cavity lightly packed. In some cases it will be found that the spleen is much disorganized and a great mass of spleen tissue seen to lie in the abscess cavity. In such cases the loosened tissue is gently removed. Irrigation should not be employed on account of the danger of hemorrhage. Secondary hemorrhage is always imminent in these cases and in the course of the after treatment large masses of splenic tissue may come away. If, as is rarely the case, the abscess has a fairly well-defined wall or zone of inflammation around it, soft-tube drainage may be used.

The same principles are to be observed in case a kidney incision has been used. On account of mistakes in diagnosis this incision has been more frequently used than any other. The transpleural incision is rarely indicated unless the spleen seems to be held firmly against the diaphragm and adherent there while other peritoneal adhesions are lacking. In order to affect an entrance by this incision a portion of the ninth or tenth ribs, or both, in the post-axillary line, is resected and the incision carried through the pleura, the opposing cut edges of which are sutured together to prevent infection of the pleura cavity and the incision then deepened through the diaphragm. When possible, it is better to pack the wound and wait twenty-four hours before incising. The same principles are observed as in the other incisions.

Abscess of the spleen in a previously not diseased spleen is extremely rare; more rarely yet would such a condition occur without some such cause as traumatism, infection through contiguous inflammation or metastatic infection through the circulation. In the present case no discoverable cause could be ascertained. The patient, V. R., a young Italian woman, was seen by me in consultation August 19, 1907. She had been sick for twenty days with pain in the left side and epigastrium. Her illness first began with a feeling of fullness after meals, for the relief of which she induced vomiting. Her temperature was 101 degrees, pulse 140, respiration 40. The patient presented a poorly nourished and anæmic appearance. The heart and lungs were negative, in fact, the complete physical examination was negative, except for an enlarged spleen many times the normal size extending beneath the border of the ribs at which point there was a tender mass the size of an orange. There was marked tenderness in the left kidney and splenic regions. Urinalysis was negative. A diagnosis of abscess of the spleen was made and the patient admitted to my service at the German Hospital (G. H., No. 11883). The blood examination showed 18,800 white blood cells, polynuclears 66 per cent, lymphocytes 32 per cent, mononuclears 1 per cent. The tender orange-shaped mass below the left costal arch was incised and an extensive abscess of the spleen disclosed. The spleen at this point was adherent to the abdominal wall. A very large amount of foul-smelling pus escaped. A counter opening was made in the loin at the lowest part of the abscess and a glass drainage tube inserted. For some days there was considerable discharge from the wound. The compresses were frequently changed and at times there was profuse bloody discharge. After a few days the discharge became greyish. Two days after operation the blood count was 14,200 white blood cells, with 84 per cent polynuclears and 14 per cent small lymphocytes. The discharge continued profuse and greyish-brown in character, and after a few days the wound was irrigated without causing hemorrhage. On the seventh day the blood count was 13,000 white blood cells, polynuclears 63 per cent, lymphocytes 28 per cent, large mononuclears 2 per cent, myelocytes 3 per cent. From time to time a large slough of splenic tissue came through the wound. The wound kept discharging, requiring frequent change of dressing and daily irrigation. On September 21st, thirty-one days after operation, the patient had recovered sufficient strength to be removed to her home; there still was present a discharging sinus which after many weeks finally closed. Her health was fully restored and at the present time there is no sign of her previous trouble.

PANCREATITIS: REPORT OF FOUR CASES.

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PANCREATITIS, both acute and chronic, is, I believe, more common than is generally supposed, and yet it is probably rare enough to make it wise to put these cases on record as they arise. I have four cases of pancreatitis of the hemorrhagic

variety which I wish to record, and one illustrates the fact that the symptomatology is not always regular.

A typical case of hemorrhagic pancreatitis runs about as follows: Sudden, acute onset with excruciating pain in the epigastric region between the umbilicus and ensiform cartilage, vomiting and great prostration, facial expression anxious, profuse perspiration, high pulse (110 to 160), with a low temperature, generally not much above 100, rigid abdominal wall, perhaps some distention and frequently hiccoughs. The bowels may move at frequent intervals, typical yellowish-brown stools, the consistency of and looking like fat—the so-called “fatty stool,” or the bowel action may be absolutely paralyzed. The suffering is intense and one is seldom capable of giving the patient relief.

In my cases it is to be noted that all were in the prime of life, all active and enjoyed at least good health, with the exception of probably some gastro-intestinal symptoms. All were robust and fat.

CASE A.—H. S., male, age 52 years; stocky build; married; occupation, freight agent.

History.—The patient had suffered with “stomach trouble” for years. Formerly he was somewhat alcoholic, but for the past year he has been a total abstainer.

Present History.—I first saw him on the day of his attack. About 8.00 A. M. he went to his office in his usual state of health. About 9.00 A. M. he was taken with sudden, severe epigastric pain and immediately laid down on the floor. I saw him a few minutes later. He was pale and looked severely ill, was covered with a profuse perspiration and suffered intense abdominal pain, with marked tenderness over the umbilicus; abdominal muscles rigid; pulse, 135; respirations, 30. I gave a hypodermic of morphia, gr. $\frac{1}{4}$, and removed him to the hospital. He vomited shortly after arrival, a bile-stained, brownish liquid, which continued throughout the attack. The bowels moved the day before, but had not moved the day of the attack and there was no action during the attack, although oleum ricini and enemas of several kinds were used. There was complete paralysis of the gut's action. Repeated doses of morphine of gr. $\frac{1}{4}$ and $\frac{1}{2}$, used hypodermatically, did not relieve the excruciating pain, which continued throughout the attack. Hiccoughs began about twelve hours after the onset. The anxious look, the rapid, weak, small pulse, the sweating, the rapid respirations, the abdominal rigidity, the extreme restlessness and the vomiting continued until death relieved the victim, at the end of twenty-one hours of the most intense suffering I have ever witnessed.

Post-mortem examination revealed a distended gall bladder, retro-pancreatic hemorrhage, and showed that the oleum ricini had found its way into the colon. There was straw-colored serum in the abdominal cavity and there were deposits of fat globules on the intestines and abdominal wall.

CASE B.—E. B., female, age 30 years; married; had five children; occupation, housewife; height, 5 feet, 5 inches; weight, 170 pounds.

This patient visited me in 1909 and complained of some slight pain of a few days' duration, in the lower abdomen. A bimanual

vaginal examination and the passing of a sound into the uterus revealed nothing.

I did not see her again for five days, when I was called in consultation with her attending physician, and he gave me the following history:

Pain in the pelvic region, more intense the day following my examination and grew steadily worse day by day. This pain was apparently referred to the uterine organs. The third day she was suffering intensely; pulse, 110; temperature, 100; bowels moved frequently; pain referred to the pelvic region. The attending physician thought best to curette and did so without discovering anything in the uterus, thus confirming my early findings. The fourth day her pain was unbearable. The administration of hypodermatic doses of morphine of gr. $\frac{1}{4}$ and $\frac{1}{2}$ gave her no relief.

I found her suffering excruciating pain, all referred to the pelvic region, but there was no tenderness on palpation over the pelvic organs. The abdomen was somewhat distended and very rigid, with marked tenderness just above the umbilicus. She was vomiting and hiccoughing all day. Her bowels had moved on an average of once every hour and a half for the past fifteen hours. The stools were semi-solid, of good size and the typical fatty type of pancreatitis.

A diagnosis of acute pancreatitis was made and surgical interference determined upon. I opened the abdominal cavity and found it filled with a straw-colored serum, large globules of fat clinging to the abdominal and intestinal walls. The gall bladder was moderately distended and was aspirated. The head of the pancreas was large, hard and swollen. The uterine organs showed nothing. A gauze drain was placed in the abdominal cavity. The patient took the anesthetic well; pulse, 165; respirations, 35; temperature, 100. Death followed two hours later.

Post-mortem examination revealed an extensive retro-pancreatic hemorrhage near the head of the pancreas. The uterus and its appendages were apparently normal.

The interesting points are the lack of pain in the upper abdomen until late; that all the severe pain was referred to the pelvic organs, yet there were typical symptoms, *i. e.*, high pulse rate, pathognomonic stools, hiccoughs and vomiting and a diagnosis confirmed by autopsy.

CASE C.—C. S., male, age 48 years; married; occupation, printer; was treated by me in 1908 and 1909, for chronic pancreatitis, with acute exacerbations. I attended him through several sudden, severe attacks of short duration. During these attacks he vomited and was constipated, but oleum ricini was retained with beneficial results.

History of Last Attack.—In his usual health, the patient started for work and while on a ferryboat was taken with sudden, sharp, severe, abdominal pain just above the umbilicus, extending through to the back. He was removed to his home, where I saw him an hour later. The onset was more severe than his previous attacks. The pain was intense; his pulse was 140; temperature, 99. He was covered with a profuse perspiration, was struggling for breath and his face was pale and anxious. He vomited con-

tinually. All efforts failed to relieve the pain. The bowel action was paralyzed. The prognosis was very grave from the beginning.

The patient was removed to one of the larger hospitals and operated upon the same morning and I was present. He took the anesthetic well. The abdomen contained a small amount of straw-colored fluid and some small deposits of fat on the intestinal and abdominal walls. The gall bladder was distended, but the surgeon did not drain it. He said the pancreas felt normal. There was no intestinal obstruction. After this exploration, the abdomen was closed and the patient returned to bed. He died fourteen hours later, or twenty hours after the onset.

Post-mortem examination showed death was due to chronic pancreatitis, with acute posterior pancreatic hemorrhage. The entire organ showed the scars of former hemorrhages. The connective tissue was more dense at the head and less at the tail, and only about one inch of the tail end of the pancreas was free from scar tissue.

This attack was of sudden onset, typical pain over the pancreas and in the back, high pulse rate (180 at one time), moderate temperature, severe prostration and paralysis of peristalsis.

CASE D.—M. S., female, age 33; weight, 170 pounds; height, 5 feet, 7 inches; occupation, housewife; has three children. Diagnosis: Chronic pancreatitis. The patient has had several attacks. The onset is sudden, with sharp pain in the abdomen over the umbilicus, extending through to the back, and lasting from one-half to several hours; generally vomiting, hiccoughs, face very pale, great prostration, sweating, air hunger; pulse, 130-140; with great abdominal tenderness over the pancreatic region, with rigidity and distention; always constipated, but relieved by oleum ricini and enemas, and followed by tenderness for several days. The pain is frequently referred to the cardiac region. The heart is normal. Her general condition is good between attacks, which are not so frequent the past year.

An attack a few months ago began with abdominal pain and vomiting of about 14 ounces of what appeared to be pure bile.

The last attack came on after a few days' fast and after a period of unusual good health for some time. It began with a sudden attack of excruciating pain in the median line of the abdomen, just above the umbilicus. The entire body was covered with profuse perspiration. The patient had nausea, but there was no vomiting; pulse, 150; temperature, 98; face anxious and pale. The bowels had moved twice during the same day, but not after the attack until severe measures were used. The shock was great. The attack gradually subsided and the patient gradually regained her health, after several weeks, except for considerable loss of weight, tenderness over the upper abdomen, continued nausea and pallor and high pulse and exhaustion. This case has continued to have more or less tenderness over the upper abdomen, just above the umbilicus, with a pulse rate of 80 to 90, since the first attack in 1903.



EDITORIAL



ALL PROVIDED FOR BUT THE DOCTOR AS USUAL.

HAVE you read or heard the provisions of the Workmen's Compensation Act? To the writer the syllogism seems complete and very simple. The Act provides, Section 13: "The employer shall promptly provide for an injured employee such medical, surgical or other attendance or treatment * * * as may be required or be requested by the employee, * * * All fees and other charges for such treatment and services shall be * * * limited to such charges as prevail in the same community for similar treatment of injured persons of a like standard of living."

Note the last sentence; what charges do prevail for similar treatment of persons of like standard? Again I quote verbatim, this time from a hospital report: "The Attending Physicians and Surgeons shall receive no compensation from patients treated in the wards of the Hospital," What! Note the "shall." What are the charges that prevail? Nichts. Am I right?

The *Eagle* says, in a news note, July 22d: "The different hospitals held a meeting and decided to charge for patients who came in under the Workmen's Compensation Act, and determined that the fees of attending physicians and surgeons should not be included."

Would it not be the irony of fate if these timid surgeons, driven at last, like the other wage-slaves, to strike, should refuse to treat patients in the wards of the hospitals unless they received an amount equal to that paid to the hospital? And why not? Why should an institution pleading for support as a benevolent agency demand, or even receive, remuneration for its attentions and refuse it to the medical man, who, however much he may incidentally love his work, is yet doing it as a means of livelihood?

It is not necessary to follow Warbasse far on the road of Socialism to recognize and admit that much of our private practice is being taken from us; much by better hygiene, especially in the summer; much by dispensaries; most of the surgery goes to hospitals, and rightly so; much and ever more of obstetrics is going to hospitals and rightly so; more of the difficult cases should go, probably than do—if—and this little word should be printed in double capitals, if the physician received proper remuneration. When a little of his time was needed for his hospital work it was different, now very much is required, while at the same time his private work is being taken from him. Many more suggestions could be made, but this was one train of thought started in the writer's mind by this law and the medical and hospital customs involved in its administration; what has it started in yours?

W. D. L.

ANTI-FAT CURES.

THE Department of Agriculture has for some time past been investigating the various so-called cures that are widely advertised for the reduction of superfluous fat. For this purpose they have utilized part of the clerical force of the Department who have offered themselves up as sacrifices in the cause of science. After six months of thorough trial during which a large variety of well advertised anti-fat treatments have been investigated, the Department has announced that no positive results have been obtained. They have found decidedly injurious effects from some of the compounds, and in at least one instance the subject gained several pounds. The Department *Bulletin* summarizes its investigations as follows:

"The only ways that the department's specialists know of safely reducing flesh are rigid dieting and strenuous exercise, and these, to be effective, must be continued over a long period of time. The fat-reducing patient must eliminate from his diet fats, starchy foods, and sugar. In many cases it is not wise, because of other physical conditions, for fat people to attempt any rapid reduction in weight. As a general rule, diet and exercise are best directed by a skilled physician. Loss of flesh is by no means a blessing if accompanied by loss of health, energy, or strength."

Of course, these facts have long been known to the general profession, but it is encouraging to find from sources that may be deemed unprejudiced justification of medical opposition to quackery coming with such decisive force. Except in those instances where the advertisement is so evidently fraudulent as to come under the ban of the Post Office Department, little or nothing can be done to put a stop to this particular form of swindle, as the advertiser is usually careful to avoid actual misrepresentation in the claims he advances for his method. A campaign of general education offers the best means in the long run of combating this particular form of fakir.

By-the-bye, the bulletins of the Department of Agriculture do not deal exclusively with dairy products, fertilizers, flower seeds and fruit trees. Questions of general sanitation such as water supply, drainage, value of food stuffs, parasites and a host of subjects closely allied to general medicine appear from time to time in the Department's bulletins and it would well repay the average practitioner, especially in the country districts, to apply to the Department for its bulletins which amply repay careful reading.

H. G. W.

ONE RESULT OF THE WAR.

ONE immediate result of the war in Europe is already making itself felt in the beginning scarcity of drugs of foreign manufacture, especially those coming from Germany. Two well known firms dealing in German drugs have already been compelled to cease advertising their products because of depleted stock and inability to count on a renewed supply, and others may find it necessary to follow suite. Incidentally they have not made it an excuse to raise their price, as some dealers in home made products have done. The promptness with which this failure of supply has come brings out only too clearly how entirely dependent the United States is upon foreign sources for commodities—almost necessities—that should be manufactured here. It has been easy for foreign makers to obtain patents here for their products with little or no restriction, thereby enormously enhancing

their profits at our expense. In this respect England has shown admirable foresight in providing for just such a situation as now confronts us, in that English patents are only granted for such things as are actually manufactured, at least in part, on British soil. Had we been less profligate it would have been necessary for German patented products to be produced partly here and it would have been comparatively easy to have increased facilities for manufacture in already existing establishments. Now, even though the war may be shortly finished, the subsequent paralysis of industries in the affected countries will persist so long after the cessation of hostilities that many months must elapse before normal production can be established and an adequate supply of such drugs as salvarsan be obtained. H. G. W.

SOME CAUSES OF INSANITY.

THE action of the Alienists and Neurologists of the United States at their third annual meeting held at Chicago in July last, is significant of the trend of modern thought in several ways as indicated in resolutions adopted by them on mental deficiency, prevention of insanity, alcoholism and syphilis. They place themselves firmly on record in ascribing to alcoholism, habit producing drugs, venereal diseases, work in unsanitary and unhygienic surroundings and hereditary influence, the causation of a large proportion of the cases of insanity. The moral backing of their unqualified pronouncement upon alcoholism will doubtless be most welcome to those thoughtful people who have so long been striving to check the use of alcohol as a beverage and, coming upon the heels of the late action by the Secretary of the Navy, will help to reconcile many who may have doubted the wisdom of Secretary Daniel's ukase. While physicians may be divided in their estimate of the degree of toxic power exerted by alcohol, they are as one in condemning its habitual use and should be ready to subscribe to the proposition that at best its use does little good except as an occasional stimulant and that the economic waste resulting from the purchase of alcoholic beverages should at least be kept within bounds by restrictive legislation. Such legislation to be effective must be backed by public opinion and public opinion will be largely formed by the general condemnation of alcohol on the part of the medical profession. Regarding the segregation of mental defectives, the resolutions are not quite so decisive, as it is only recommended for those who are known to be dangerous to themselves and to others. The resolutions include a recommendation that sex hygiene shall be taught to the sexes separately in schools above the grammar grades; wise, if somewhat conservative advice. The creation of institutions for the care of inebriates and for the treatment of venereal diseases and the establishment of uniform marriage laws in all the states are further recommendations that should meet with general approval. It is greatly to be hoped that the conclusions embodied in these resolutions may be widely read and generally discussed. H. G. W.

PRACTICAL CLIMATICS.

WE are indebted to our esteemed contemporary, the *Survey*,* for a hint contained in a little story dealing with the experience of a tuberculous patient in search of health. He, a man with a specialized trade, was sent by an unthinking physician whom

* A Narrow Squeak. T. C. Merrill, M.D., *The Survey*, August 22, 1914.

he consulted to the southwest, because it happened to occur to the doctor that it was a good climate. Of course the mechanic knew nothing of the locality except that it was recommended to him. Means of gaining a livelihood were not considered. He thought he might ply his trade and his wife expected to find sewing to do. None of them considered that, in a country given up to ranching, trades were useless and sewing not to be had. On their arrival they consulted a physician who knew from bitter experience the limitations of the country, and on his advice eventually departed for a Canadian farm where a relative was glad to help them to be self sustaining and where good health and a good living eventually developed.

The same point of view seems to be firmly grounded in physicians and layity alike: On discovering that tuberculosis exists the patient must be sent away. It is greatly to be feared that the average physician seldom takes into account the practical side of the climatic treatment of lung troubles. The first thought is to find a good climate, irrespective of the patient's ability to subsist there. Clean, dry air is a decided advantage, but poverty and homesickness will quickly negative its good results. Many a young fellow of limited means has been hurried to Denver only to find that he needs abundant means to live there comfortably and that idleness, worry and homesickness soon begin to drag him down. Contentment and peace of mind are essential to a cure in most cases. As a matter of fact there are comparatively few places where the patient of limited means can go with the assurance of finding occupation of any sort. Only recently a physician in New Mexico wrote in reply to a request for information about the resort with which he is connected, "Don't send your patient here unless he has abundant means. Living is high and there is no work except for able-bodied men." Somewhat careful inquiry has shown the difficulty of finding suitable resorts for consumptives of limited means. There are State sanatoria for the very poor and accommodations aplenty for the well-to-do. It would be well if every physician would take the precaution to acquaint himself with the advantages and disadvantages of a selected list of health resorts in order to be in a position to speak with authority when his advice is sought. It may be that he can gain admittance for his patient to a well conducted sanitarium for such a term as will teach the invalid the system and regimen which, after all, are the real advantages of sanitarium care. That learned, the patient is fitted to care for himself in some country home suited to his means, or to establish himself in some suitable locality where he may, without too much effort, support himself. Excellent results are being obtained in the treatment of early cases in and about New York, and it seems probable that in time the idea of the urgent need to hurry patients away to distant points before they have been thoroughly trained in caring for themselves will give way to a more rational view. At all events the sooner physicians as a class school themselves to fit the needs of the individual to the individual case the better service they will render to a class of patients with whom routine treatment is quite likely to fail.



Society Transactions



TRANSACTIONS OF THE BROOKLYN PATHOLOGICAL SOCIETY.

Regular Meeting, December 11, 1913.

The President, SIMON R. BLATTEIS, M.D., in the Chair.

A Symposium on Hyperthyroidism.

(For original papers see pages 321, 326 and 331.)

Medical: The Clinical Aspects of Physiological Hyperthyroidism.

By Dr. Harlow Brooks.

I did not come here tonight for the purpose of discussing exophthalmic goitre, but it appears from what has transpired that I will have to make some remarks on that condition.

I am one of those clinicians who believe absolutely that exophthalmic goitre is purely and simply an evidence of hyperthyroidism. I think that my belief, my faith, at it were, is founded on anatomical evidence, notwithstanding the very excellent presentation we have this evening of the opposite side of the subject. I am one of the school to which Wilson belongs, in so far as this subject is concerned.

I believe, furthermore, that if any of you are in doubt as to the relationship of too much thyroid, whether it be the iodine salt, or some other secretion which we do not understand, for we all recognize that the thyroid must have a great deal more to do than the secretion of a simple salt of iodine; if any of you are in doubt, take an active case of exophthalmic goitre and feed it thyroid, follow it up until you lose your faith or your patient, for I think you will have ample corroboration of the thyroid theory in the fact that these patients become under such treatment much worse.

Also, I think, most of you gentlemen who practise medicine run across patients every now and then who voluntarily take thyroid to improve their figure, to lose their fat, or perhaps people who think their features are otherwise improved by the drug, as is undoubtedly the case when they are a trifle myxedematous. These patients, for instance, often come to you with well-marked symptoms of hyperthyroidism; every symptom I know of in exophthalmic goitre, may be shown except, of course, the hypertrophy of the gland. That very marked tachycardia develops under such conditions I do not think any one will dispute.

I cannot see the difference between these artificial mild types of exophthalmic goitre produced by the feeding of thyroid extract or fresh thyroid and the milder forms of exophthalmic goitre and I am also fully convinced that if you give thyroid in exophthalmic goitre you accentuate the symptoms.

DR. H. BECKMAN DELATOUR, in discussion, said:—"There is no question but that in certain of these cases the removal of a half or even more than a half of the enlarged gland brings about a very decided and marked change in the train of symptoms that have existed. The change is in some cases so sudden as to be beyond all expectation. I have seen women in the highest state of excitability, absolutely beyond their own control, with a rapid, irritable pulse, become normal individuals within a week after the removal of the enlarged gland; that in cases in which there had been sometimes a moderate degree of exophthalmos; sometimes with no exophthalmos.

"I believe with Dr. Brooks most thoroughly in the non-advisability of operating in a young person during the stage of adolescence. I have followed a number of cases in young girls from sixteen to twenty, and have advised against operation, although the gland was fairly enlarged, and have seen them go on to recovery and an entire disappearance of the symptoms. I believe the experience of many operators has been that the removal of the gland in young people has been much more serious than it is in older people.

"A certain few of the younger people demand operation on account of pressure symptoms. Only two months ago I removed a gland from a young girl sixteen years of age because of the pressure symptoms, and I saw her on Monday and she is in perfect health. The rapid pulse has disappeared and she is comparatively comfortable now. Whether she will have any further return of her symptoms I do not know.

"I think there is a great difference which the pathologists have not cleared up for us, in the constituents of these glands. There are certain of them that act differently according to the pathological conditions that are present, and as yet we have not been enlightened thoroughly on them.

"There are certain classes of cases, as I have said, that are greatly benefited by operation, and there are certain ones that had better be left alone."

TRANSACTIONS OF THE BROOKLYN SURGICAL SOCIETY.

Program.

Annual Open Meeting, Thursday, February 5, 1914, at 8.30 P. M.

The President, RUSSELL S. FOWLER, M.D., in the Chair.

- I.
 1. Macroglossia with Resection of the Tongue.
 2. Cases of Epithelioma of the Lip.
 3. Cases of Salivary Cyst Due to Wound of Steno's Duct, by John E. Jennings, M.D.
- II.
 1. "Report of a Group of Cases Illustrating Typical Points of Intestinal Ankylosis," by William Francis Campbell, M.D.
- III.
 1. Address: "The Results of the Surgical Treatment of Chronic Duodenal and Gastric Ulcer," by Charles L. Scudder, M.D., of Boston.

Macroglossia.

By John E. Jennings, M.D.

Macroglossia is a congenital condition due, as a rule, to lymphatic obstruction—in reality a lymphangioma cavernosum. Occasionally a muscular macroglossia is seen in which the enlargement of the tongue is due to a symmetrical hypertrophy of all its elements. This variety, however, is rare and when found it is usually associated with idiocy.

The following case, in which a remarkable enlargement of that organ is not associated with defective intellect, is interesting on account of its rarity, the interference of the size of the tongue with speech and the deformity of the lower jaw caused by the pressure of the tongue against the teeth.

George F.—10—U. S.—School.

Family History—Negative.

Past History—Negative. Has had a very large tongue since birth. This does not pain him or annoy him in any way but by interfering with his speech. Tongue is of normal color and consistency but projects so far out of his mouth as to cause a deformity of the lower jaw so that the incisors will not meet.

December 19, 1910.—A V-shaped segment of the tongue was excised under chloroform and the edges of the cleft brought together with black silk sutures. Primary union. Convalescence uneventful. The case is presented because of the fact that the tongue's enlargement was a simple muscular hypertrophy. The boy's mentality was normal.

Epithelioma of the Lip.

By John E. Jennings, M.D.

It is not infrequently urged on behalf of inadequate, incomplete or experimental methods of treatment of this condition, such as the use of X-ray, radium, fulguration, etc., that they avoid the occurrence of scar deformity, and indeed many plastic operations are described which tend to emphasize the cosmetic result to be obtained rather than assure a proper removal of the tissues likely to be involved. I wish to present a few pictures to illustrate the fact that even if all of the lower lip be removed, as it was in these cases, together with a complete removal of the gland and fascia of the suprahyoid, submaxillary and inferior carotid triangles on both sides of the neck, the resulting deformity a year later is not striking. In these cases no flaps were

cut; the mouth at the end of the operation was a round hole too small to admit more than one finger. At the end of a year, as you will see, it has assumed the appearance of a normal mouth.

Salivary Cyst.

By John E. Jennings, M.D.

Some years ago I presented to this society a case of salivary cyst due to a wound of Steno's duct, which was treated by a plastic operation through the face, in which the severed ends of the duct were found and united over a small rubber tube. The skin was closed over this and the tube was expelled into the mouth sometime during the third week. The patency of the duct was maintained for some weeks by the passage of whalebone bougies from the mouth. The result six months later was good.

I have now to report a second case in which essentially the same technique also met with success.

Patrick B.—27—U. S.—Painter.

On admission.—Scar on face two inches long; cyst two inches by one inch, fluctuating, but with no signs of inflammation, lies directly under the scar.

Family and Previous History.—Negative. One month ago a negro slashed his left cheek with a razor. The cut, three inches long, was sewed up by an ambulance surgeon. About two weeks ago a swelling appeared at the side of the scar. This swelling was painless and steadily increased in size until the present time.

Operation.—For salivary cyst of left cheek. Filiform bougie passed through the salivary duct from oral cavity into cyst cavity. The cyst cavity opened through the cheek. Portions of cyst cavity curetted and cut away. Contents of cyst clear and thin. Silk thread drawn through duct into mouth and left in place. External wound closed with silk sutures. Wound drained salivary fluid for about three weeks; then closed.

"Report of a Group of Cases Illustrating Typical Points of Intestinal Ankylosis."

By William Francis Campbell, M.D.

DR. LEWIS S. PILCHER, in discussion, said:—"There is very much to be said along the lines opened up by the paper presented to us. This subject has occupied my own attention for some time and I have had an opportunity to observe repeated instances which are largely in accord with those which have been reported by Dr. Campbell.

"The points at which we are most likely to meet those conditions which produce fecal stasis are generally accepted and are in accordance with the observations which have been made here this evening. Perhaps the greatest amount of discussion has centered about the question of the etiology of this condition. As to whether in the majority of cases those of us who claimed earlier that it was the result of a mild and long-continued irritation of an infective character that produced these changes in the serosa covering the intestinal tube at these points, or whether there was originally an error in the development of the peritoneal covering, congenital in its character, have been the two views which have attracted the most attention. The observations of Dr. Campbell would lend very strong support to the first theory. The observations of many of our surgico-anatomical observers that have been published, however, seem to give a very considerable degree of probability or support to the second.

"The more I have observed these cases and studied them the more I have been inclined to think that in most of the instances that present themselves to us both elements were present, a primary change or failure, error or abnormality perhaps would be better, in the peritoneal covering of developmental origin, superadded to which has been a long-continued mild irritation. We ought not to forget either in our plans to overcome the condition, nor should we ever forget that the condition is often present, should be sought for and needs most careful and thorough attention if we expect to relieve the patients from the symptoms which they present and for which they claim our relief."

Title of Paper: Suggestions following a Study of the Results following the Surgical Treatment of Chronic Duodenal and Gastric Ulcers.

By Dr. Chas. S. Scudder.

The paper consisted of an analysis and study of fifty-two cases of proved chronic ulcer. Among these fifty-two cases there were two deaths, making a

mortality of 3.8 per cent. One of the deaths was occasioned by a peritonitis entirely apart, so far as could be determined, from any error in technique. The second death occurred many years ago following a partial gastrectomy and a posterior gastro-duodenostomy of Kocher. There have been no deaths in ordinary gastro-enterostomy cases, and no deaths in any other partial gastrectomy cases.

This paper was presented in order to contribute a few facts to the gradually increasing number of returns following the surgical treatment of chronic ulcer. When the patient is said to be well it is understood that he has been free from pain, abdominal and gastric disturbances, and considers himself practically well.

There were returns reported from twenty-nine cases covering a period from two to seven years following operation. Of these twenty-nine cases 89.6 per cent have been cured and 10.3 per cent were not altogether cured. If to this group were added the cases of from one to two years following operation there is a total of fifty-four cases, the end results of which covered from one to seven years following operation. The percentage of cured cases in the combined groups were 85.5, and of those not cured, 14.7.

It will thus be seen that in this definite and small group of chronic ulcers the cases were treated appropriately by surgical measures, all medical measures having failed to cure, and a very large percentage of such cases treated by surgical measures remained well over a very considerable time. In other words, surgery is effective in the treatment of chronic ulcer of the stomach and duodenum.

The details of eight cases in which there was not a cure were given.

A preliminary report was made of the behavior of the stomach following gastro-enterostomy, when studied by the X-ray after the taking of a bismuth meal.

The question as to the effect of gastro-enterostomy upon digestion was discussed at some length.

The question of occlusion of the pylorus was discussed and its indications stated.

The wisdom of excising ulcer by partial gastrectomy was discussed.

The value of the X-ray in the diagnosis of chronic ulcer of the duodenum and stomach was considered.

The various theories with regard to the etiology of ulcer were presented and the bearing of Rosenau's experimental work upon ulcer was discussed.

In general it was concluded that the consensus of opinion of surgeons and physicians alike is that cases of chronic ulcer which have received careful medical treatment and have failed to respond permanently to such treatment should be treated by surgical measures. It was concluded that the surgical mortality under proper conditions is comparatively low, and that the results of surgical treatment are good.

Address: "The Results of the Surgical Treatment of Chronic Duodenal and Gastric Ulcer."

DR. LEWIS S. PILCHER, in opening the discussion, said:—"I want to express at the outset, Mr. President, my appreciation of the privilege that we have enjoyed of listening to this paper this evening. The thoroughness and the impartiality, the avoidance of any attempt to juggle with figures but to fairly state real conditions commands our admiration. The modesty with which it has been presented had given additional interest to the facts related. I feel that we owe a debt to the eminent author for giving us the information which his paper has presented. I cannot say, however, that I have as clear an appreciation of the etiology of the condition of chronic duodenal ulcer as I would like to have. I wish that the speaker might elaborate in his further remarks, if he would, whatever he may have gathered from his studies as to the cause of these conditions. We had a hint of it in what he said as to the experiments of Rosenau. Are we to understand that there is a wider application to be made of the theory suggested by it; that there is a specific organism the presence of which in the blood and its localization in the duodenum or stomach wall is the cause of these ulcers? If not, what other conditions are there that we may be on the lookout for that we may warn our patients against and which the profession as a whole may turn their investigations upon?"

"I wish that we might have a little more definite knowledge as to the etiology of this particular kind of ulcer.

"I infer as regards the treatment of these conditions, that the author's experience favors the posterior gastro-enterostomy, leaving the pylorus un-

touched. I trust that in the further remarks which he may favor us with he may elaborate that point a little further."

DR. WILLIAM B. BRINSMADE, in discussion, said:—"I would like to emphasize what Dr. Pilcher said in appreciation of the perfectly fair and candid presentation on this subject.

"I fancy that the experience in Brooklyn in regard to the X-ray diagnosis of intestinal conditions corresponds to the X-ray diagnosis of similar conditions in Boston. It is not always satisfactory and we do not always find exactly what the roentgenologist tells us we are going to find.

"It is very interesting to have Dr. Scudder tell us about these results of gastro-enterostomy, which bears out our own experience, in the light of the recent remark of Sir Arbuthnot Lane, of London, that "gastro-enterostomy was a silly little operation."

I would like to have Dr. Scudder tell me a little bit more about the infolding of ulcers. Personally, my one experience with that procedure was a case in which I infolded a small flat ulcer and took out a chronic appendix and a year later operated on the same case and had to do a partial gastrectomy for a very large indurated ulcer occupying the site of the infolded area.

"I appreciate particularly the care with which Dr. Scudder has described the preliminary medical treatment of these cases and certainly would give it my very hearty sanction."

DR. THOMAS B. SPENCE, in discussion, said:—"I am particularly interested in the length of time in which these cases have been observed after operation. A good many of the medical men have made the assertion that after about a year these patients begin to go bad again. It hasn't been the experience, I think, of the surgeons of Brooklyn, and I don't know what foundation there is for the statement.

"The members of the Society may remember that a year ago I had the privilege of showing a series of these cases (rather recent ones they were), and I am very glad of the opportunity to report tonight that all of those cases which I showed a year ago have remained entirely well.

"There are so many questions that the gentlemen have asked Dr. Scudder that I don't want to ask any more, but there are a whole lot of things which I don't know about duodenal and gastric ulcer yet."

DR. WILLIAM LINDER, in discussion, said:—"I was very much impressed with the paper of the evening and it has taught one very important lesson, that is, the simplicity with which the author deals with these cases.

"One is told at the Mayo clinic that the great majority of these ulcers should be excised, owing to the development of cancer in the ulcer base. Here we are told that a gastro-enterostomy is efficient and in none of these cases did cancer develop. I must agree with the author in the value of gastro-enterostomy, not only as a drainage operation, but as an operation which is efficient in neutralizing the gastric juice and thereby influencing and curing the ulcer.

"I have had one experience where an ulcer, very large and indurated, was entirely healed and found so at the second operation.

"With regard to the question of following our cases, which we have a great difficulty of doing in some of our hospitals, it has been practically made clear that these cases do remain well and that we have a definite treatment for definite chronic ulcer cases. The only cases in my experience that have not resulted beneficially are those cases of soft ulcers which should have been medical cases."

DR. MATHIAS FIGUEIRA, in discussion, said:—"I would like to say a few words in regard to the point relative to the determining of the symptoms after the operation for gastric ulcer. In two cases in which I operated for gastric ulcer and the symptoms returned, instead of occluding the pylorus I united the loop of the gastro-enterostomy to the bowel below and in that way I relieved the symptoms and the patients got well by an operation which is simpler than the operation of occluding the pylorus."

DR. SCUDDER, in closing the discussion, said:—"I appreciate that there are many things in connection with chronic duodenal and gastric ulcer concerning which we are in doubt. Dr. Pilcher has inquired about the etiology of ulcer and has asked if any light can be thrown upon it. In order that an ulcer may form in the gastric or duodenal mucosa there must be a localized spot of necrosis in this mucous membrane. The cause of this necrosis is probably an embolism of some sort. The necrotic area having been established the hyperacidity of the gastric juice and the gastric juice itself, acting upon the necrotic area, probably cause the ulcer.

"The work of Rosenau has demonstrated that chronic ulcer may be formed in dogs following an injection of streptococci obtained from the lymphatic

glands in the immediate neighborhood of the ulcer in the human subject. Rosenau has demonstrated that certain streptococci select apparently the duodenal and gastric mucosa as a spot where they will produce embolism. The gastric juice does the rest through digestion of this necrotic area. These experiments of Rosenau, although not yet confirmed may explain the association of chronic ulcer in this region with tonsillar infections. Much information upon this point may be of considerable clinical value. We should inquire of all of our ulcer patients whether they have been subject to tonsillar infections.

"With regard to the application of gastro-enterostomy to the treatment of ulcer I would simply say that in cases of duodenal ulcer, and in cases of ulcer near the pylorus, a posterior gastro-enterostomy seems to be an efficient operation. I am not yet convinced that a blocking off of the pylorus by some means is necessary in these cases. I believe that in cases in which there is a recurrence of symptoms following a gastro-enterostomy a permanent closure of the pylorus is wise. I believe that a division of the pylorus should be employed as a secondary procedure rather than as a primary procedure under ordinary conditions. The infolding of the peritoneal surface of the duodenum by careful suturing with linen sutures will hold the pylorus partially obstructed for a sufficient length of time that such obstruction may be of definite therapeutic value. In certain cases this obstruction will be all that is necessary to effect a cure.

"The relief from operation in cases of chronic ulcer is greatest in those cases where stasis is greatest. In ulcers situated away from the pylorus and not directly obstructing the pylorus, gastro-enterostomy properly done, with or without pyloric closure, is a satisfactory form of treatment in more than one-half of the cases in which it is undertaken. The internist very properly should occupy a critical position with regard to the benefit to be derived from the surgical treatment of chronic ulcer. He very properly should inquire as to the mortality in these operations, and as to the benefits to be derived from these operations.

"With regard to the mortality, it has been very materially lowered in the ordinary cases of this group, and with regard to the benefit following surgical operation, there is no question that a very large percentage amounting to 80 or 90 per cent of the cases entrusted to surgical treatment under proper conditions are benefited by such treatment. In other words, the physician may trust surgery because of a lowered mortality and because of a very definite benefit accruing to his patients suffering with an intractable chronic duodenal or gastric ulcer."

TRANSACTIONS OF THE BROOKLYN SURGICAL SOCIETY.

Regular Meeting, Thursday, March 5, 1914.

The President, RUSSELL S. FOWLER, M.D., in the Chair.

Program.

1. (a) Fracture of the Humerus. Radiographs. Patient.
(b) Enlargement of the Femur. Radiograph. Patient.
Case (b) discussed by Dr. William Linder.
2. (a) A Case of Fracture of Humerus. Roger Durham, M.D.
3. (a) A Case of Gall-stones. Operation, removal of Gall-bladder. Presentation of Specimen.
(b) Angulation of the Sigmoid. Result After Resection. Patient.
(c) Cases Illustrating the Conservative Treatment of Fractures. Radiograph. Patient.
(d) Cases Illustrating the Advantage and Results of the Two-stage Operation for Hypertrophied Prostate. Patient. W. A. Sherwood, M.D.
Cases (b) and (c) discussed by Dr. William F. Campbell; case (b) discussed by Dr. Thomas B. Spence and Dr. William Linder.
Case (d) discussed by Dr. J. Richard Kevin and Dr. Russell S. Fowler.
Discussion closed by Dr. W. A. Sherwood.
Paper: "Lexer Operation for Ventral Hernia." Carl Fulda, M.D.
Discussion opened by Dr. William Linder and closed by Dr. Carl Fulda.

Fracture of the Humerus. Patient. Radiographs.*By C. P. Gildersleeve, M.D.*

This, gentlemen, is a Sandy Hook pilot and five weeks ago last Tuesday, in other words, thirty-seven days ago, he was up at Van Cortlandt Park skating and the last act performed was to slip and his 220 pounds landed on his left elbow, on the point of the elbow. He went direct to the Fordham Hospital and some member of the house staff there put on a very nice temporary dressing. I saw him the next day and examined his arm and I found that he had a very badly broken humerus. Transverse fracture two inches above elbow, the lower fragment split vertically into the elbow joint. I found that the elbow-joint was in a condition of intense synovitis, thoroughly distended with fluid, and he had a deep-seated hematoma from the axilla to the wrist and the forearm and arm at that time were considerably edematous.

I sent him to Dr. Eastmond the next day, January 28th, and Dr. Eastmond sent me this picture which shows the fracture as above described.

I put on a posterior splint (plaster of Paris) and applied evaporating lotions to the swollen joint, and on February 3d, five days later, I sent him to Dr. Eastmond and he sent me this picture. In both, the main fragment occupies a plane lower than the lower fragment; in other words, overriding. I then sent him to the hospital and thought I would give an anaesthetic and try and obtain a better position, but I found that the patient was thoroughly "game" and tolerated a fairly heavy weight and I felt satisfied that I would be able to overcome the riding, and on February 9th I sent him again to Dr. Eastmond, who took this picture, which shows the overriding corrected, and this proved to my satisfaction that he would get a good result without operative interference, so I re-applied the posterior splint. The final picture was taken today, late this afternoon, and the picture I could not get under the circumstances, so I will have to ask you to take my word for it. The picture taken today showed perfectly straight bony union. The condition is similar to the third picture, with the exception that the two segments of the lower fracture are brought nearer together, still they gap, but he has strong bony union and I think that if you compare the two arms you will agree that the position is pretty good. There is a marked limitation of motion as regards flexion and extension.

This is the second time that I have taken the arm out of the splint, and the criticism may be made that I should have taken it out before if this patient had the small amount of nerve which many have. I know that when I tell him to use the arm he will go right ahead and use it. The only difference is that it does not make as good a result as you could find after six weeks, as far as motion is concerned.

Dr. O. A. Gordon stating that he did not understand Dr. Gildersleeve as to the interpretation of the last radiograph in the above case, Dr. Gildersleeve explained that this radiograph simply showed that there was an improvement on the third radiograph which had been shown; in other words, that the overriding had been entirely overcome and the space between the two segments of the lower fragment is much less, but not approximated; that the gap was entirely filled up with callus; that callus was thrown out on the external and internal side and that Dr. Eastmond said it was thoroughly united by bone. In many of these fractures one will fail to get a good result without open operative treatment, but I think the pendulum has swung too far in the direction of operative treatment, largely due to the fact that we may get unnecessarily alarmed by X-ray pictures of these conditions.

Enlargement of the Femur. Patient. Radiograph.*By C. P. Gildersleeve, M.D.*

The second case which I have to report this evening is that of an Italian, age, twenty-one, who was found in my ward when I went on duty a few weeks ago.

The family history is as follows: Grandmother died of cancer. Mother died of stomach trouble. She had pain and vomiting for several months before her death. As regards previous history, the patient has never been sick until this trouble began with the thigh.

The present trouble began when he commenced to have pain, worse at night, about a year and a half ago, in the left thigh. He lost fifteen pounds in weight.

I found this young man in the ward and discovered that he had a tumor of the left femur. He had been in the ward for six weeks. It is now nearly three months since I went on. He claims he has very little pain now and says that it is less than it was and that he is losing no weight. I had an X-ray picture

taken and this is a fair picture of it. I had a Wassermann taken and that was negative.

I presume the chances are that this is a sarcoma, but I am not sure. Every time that I see one of these cases it scares me for the following reasons:

About twenty-five years ago a patient was sent to me, a young man twenty years of age, who had a swollen leg, apparently just such a swelling as this leg is. That was before the days of X-rays, etc. I immediately concluded that it was an osteosarcoma. I consulted with Dr. Jarvis Wight. He asked me what I thought it was and I said an osteosarcoma, and he said that he thought so, too. He asked me what I was going to do about it? I told him I thought I would take the leg off. He agreed that it would have to be done probably but advised me to wait and see how it got along. Well, to make a long story short, we waited and I saw this same fellow ten years afterward and his leg was all right; so I am always afraid of these cases.

In answer to a question by Dr. W. F. Campbell as to whether or not there had been an interpretation of the X-ray plate, Dr. Gildersleeve replied that Dr. Birmingham took the X-ray and he did not know what the condition was but thought it was sarcoma.

Dr. William Linder wanted to know whether the patient had given a history of having had a sore throat prior to this bone condition, and stated that the patient, on questioning him, had stated that he had had a sore throat. Dr. Gildersleeve replied that he could not get a definite history and that he had read all the history which he had in the case; that the patient's grandmother died of cancer and his mother probably; that the patient denied having had any sickness until the appearance of the present trouble; that, as already stated, the Wassermann reaction was negative; and that he had forgotten to mention the fact that on general principles he had put the patient on iodid of potash and to his surprise he took 120 grains of the drug a day without showing any symptoms of iodism and that just what that signified he did not know.

In answer to a question by Dr. O. A. Gordon as to whether that was before the Wassermann, Dr. Gildersleeve stated that it was not; that the Wassermann was taken before he went on duty; that he went on duty the first of January and that the patient had been taking iodid of potash ever since. Dr. Gildersleeve stated that he certainly would not operate upon this case unless the condition became much worse than at present.

DR. WILLIAM LINDER, in discussion, said:—"I wish to state that in my experience I have had a similar case and I made a provisional diagnosis of sarcoma. It is now about four years since I saw the case and it came to me about a year afterwards with supposed enlargement of the femur, and from the fact that the patient was in perfect condition a year after, I was inclined to change my diagnosis. I believe that he had one of those infections of a mild degree of osteomyelitis, and I believe that this case resembles mine very much."

DR. DURHAM reported the following case:

Mrs. C. E. M., 54 years old, widow, United States.

Past History.—Two and one-half years ago had an attack of neuritis involving much of the body, resulting in much crippling. Several attacks of bronchitis. Has lost from 30 to 50 pounds in weight in past eight months as result of strain from nursing her mother in her last illness.

Present History.—Three days ago she fell on the platform of the station at Canandaigua, while crossing the tracks, the right lower extremity flexing under her, and the knee striking the ground. She was unable to get up, bear her weight on the foot, or extend the leg or flex the thigh. A bandage and compress was applied, she was assisted to a train to Rochester, and again changed cars for Buffalo, where she spent the night, coming the second day to Brooklyn. No other dressing was applied, and though the patient did not stand on the injured leg, she helped herself with the aid of a single crutch and the assistance of porters. She was not, however, carried. She came by taxi to her home in Sixth Street, Brooklyn, was helped to her room on the third floor, where she was first seen and examined.

Examination.—Right knee swollen and surrounded by large area of ecchymosis, being two inches larger than the left; swelling extends down leg, including the foot. Marked tenderness about joint and over lower third of the thigh, especially to the outer side. No bone irregularity palpable. No bony crepitus nor false point of motion, but marked lateral mobility of the joint. Mensuration revealed nearly two inches of shortening. The patient was generally poorly nourished, anemic, and had evidences of an active bronchitis.

On the eleventh day an X-ray revealed an oblique, impacted fracture, four inches above the knee joint, with a large wedge-shaped splinter also impacted. The foot was in perfect alignment.

Treatment consisted in the application of a posterior and two lateral splints, including the entire limb, which allowed the patient to sit up in bed, together with considerable freedom of position.

The interesting point in the case is the fact that this patient was able to travel so far without adequate dressings, and in spite of her age and general condition did not break up the impaction. The firm impaction, together with her age and poor physical state, contraindicated any attempt at reducing the fracture in order to overcome the shortening.

A Case of Obstruction of Hepatic Duct. Operation. Specimen.

By W. A. Sherwood, M.D.,

I would like to present a specimen which I removed on Monday of this week from a patient who had the following history:

She was married, fifty years of age, and came under my care last November suffering from a perinephritic abscess, which was opened and drained. The healing of the wound was complicated by the presence of a fistula which leaked urine for some weeks after the operation. Evidently there had been some involvement of the kidney substance itself, some breaking down, and this fistula delayed the healing of the wound until a few days before her readmission into the hospital. She was admitted to the hospital a week ago today with a history of having been taken acutely ill with epigastric pain, vomiting, pain very severe in character, with fever and elevated pulse rate, and when she was admitted to the hospital she had a large mass occupying the right hypochondriac region.

With the previous history of a perinephritic abscess and urinary fistula, and these symptoms appearing almost immediately after the fistula had closed, it made us think very strongly of the possibility of some further infection of the kidney itself or the perirenal tissues, and it was not until after several days had passed that we were able to definitely determine that this mass had nothing to do with the kidney, but had originated in the gall-bladder. On further questioning a definite history of previous gall-stone attacks was elicited, and we operated on the patient on Monday of this week, a gall-bladder incision being made, immediately disclosing a very much enlarged gall-bladder reaching down as far as the umbilicus.

I present this specimen as one which I believe typifies a gall-bladder which should be removed and not left in with drainage. It was found very much enlarged, thickened, and when aspirated several ounces of clear mucoid gelatinous material were removed. There was no bile, but impacted in the cystic duct were these small gallstones, forty or fifty in number.

It seems to me that this is a good example of one of the types of gall-bladder which should be removed rather than drained. There was, of course, no common or hepatic duct obstruction. The patient is making a good recovery.

Angulation of the Sigmoid. Result After Resection. Patient.

By W. A. Sherwood, M.D.

A year ago the speaker reported before this Society three cases of angulation of the sigmoid, which I think we have all come to recognize as a very definite surgical condition. Those three cases were all due to strong, firm bands of adhesions which bound the sigmoid in two cases to the lateral wall of the abdomen and in the third case to the left uterine adnexa so that a sharp angle was formed in the sigmoid, resulting in pain, in fecal stasis and its accompanying symptoms.

Those cases were easily relieved by simply dividing the bands of adhesions and they have remained well since.

The other type of angulation of the sigmoid, I believe, is the loop of intestine, the redundant loop of sigmoid which drops down into the pelvis and forms a fecal reservoir and frequently results in attacks resembling intestinal obstruction and causes pain, vomiting, loss of weight and the usual symptoms of stasis. Such was this case which I report tonight:

The patient, 28 years of age, single, came into the hospital in the latter part of September last with the following history: For five or six years she has been running down in general health and has been suffering with more or less constant pain low down in the left side of the abdomen. The pain is very much exaggerated at the time of her menstrual periods. She suffered from

attacks of vomiting frequently and from constipation, which has been growing more and more obstinate.

When she was admitted to the hospital she had some temperature. She has had a gradual loss of flesh and is entirely incapacitated by the symptoms.

Nothing was definitely made out on examination, but having seen some of these cases, as reported before, we made a diagnosis of either a perisigmoiditis or an angulation of the sigmoid.

She was operated on October 1st and no difficulty was experienced in demonstrating a loop angulation of the sigmoid. About ten or twelve inches of the sigmoid hung down below the brim of the pelvis, full of fecal matter, constricted at either end where it dipped over the brim of the pelvis. The loop itself was weighted down with intestinal contents, was edematous, and at either end of the loop there were firm, whitish bands of adhesions.

It seemed that the proper thing to do in order to relieve the woman was a resection of her sigmoid. The loop was resected and an easy end to end anastomosis was quickly effected with a Murphy button.

Her convalescence has been uninterrupted and she tells me tonight that she has been entirely relieved of her symptoms. She is not constipated, has no vomiting, and since the operation has gained 22 pounds in weight.

The speaker has frequently found the Murphy button the quickest and safest method of anastomosis in this part of the intestinal canal, when, because of a short meso-sigmoid, it is sometimes difficult to bring this part of the intestine well up into the wound for the necessary manipulation and suturing.

Cases Illustrating the Conservative Treatment of Fractures. Patient. Radiograph.

By W. A. Sherwood, M.D.

This patient represents one of two cases of fracture that we have had recently under our care and in which for certain reasons we were forced to use the conservative method of treatment, and I present him simply to illustrate what can happen, particularly in young individuals, with fractures in which there is a great deal of displacement.

I feel that we have been inclined to overdo the open operation and particularly the Lane plate operation. I do not mean to say that I would advocate this form of treatment in every case of fracture of this sort, but I think we have been often misled by the X-ray.

This boy is fifteen years of age. He came into the hospital November 17th, after having been run over by an automobile. Sustained a fracture of his left clavicle and a compound fracture of both bones of the right leg, slightly above the middle of the leg. Three attempts were made at reduction under a general anesthetic. None of these attempts at reduction was satisfactory.

The X-ray plate which I show you demonstrates quite well the amount of displacement there was, and you can see that it was considerable.

Because of a slight skin infection in the wound we did not feel justified in doing the open operation. The infection was the only thing that prevented us from doing an open operation, but we deferred it and deferred it so long that by the time the skin infection had cleared up his fracture had quite solidly united. We decided to let him go home and see how much disability and deformity he had and have him return to the hospital for an open operation if necessary, later on. We have been observing him from time to time since and he seems to have a very good result both anatomically and functionally. There is some deformity which you can feel, but it is hardly noticeable, and he has a perfectly good and useful leg.

I had a second case of similar nature in a young man twenty-two years of age. He had a fracture of both bones of the same leg, and in his case the same treatment, for various reasons, was followed out. It was not considered wise to do an open operation on him and he has an equally good result.

I do not mean to say that I advocate this plan of treatment in all similar cases. I believe that the open operation is essential in many cases of fracture, but these cases are presented to illustrate the fact that in young individuals some fractures with great displacement of the fragments in which a perfect reduction is not possible, may repair themselves with little or no deformity and with perfect function.

In any surgical procedure we have two main considerations. The first is that the patient survive the operation, and the second that we restore the patient to normal function and good health as nearly as possible.

Cases Illustrating the Advantage and Results of the Two-Stage Operation for Hypertrophied Prostate. Patient.

By W. A. Sherwood, M.D.

I do not think that it is necessary for me to discuss the different types of operation for prostatic disease. I think that has been pretty well settled, but I want to present a couple of cases which I believe illustrate the advantages of the two-stage operation for prostatic hypertrophy.

This patient is sixty-five years of age. He was admitted to the hospital September 29, 1913. He came in with complete retention of urine and we were unable to pass a catheter. He had a previous history of frequent getting up at night to pass his urine, frequent catheterization and the usual symptoms of chronic prostatism. Rectal examination showed a much enlarged, moderately hard, smooth prostate. His bladder was aspirated and within a couple of days we were able to introduce a permanent catheter for drainage. He had considerable cystitis and was put on urotropin and bladder irrigation.

On October 6th, under local anesthesia (novocaine), the bladder was opened and tube drainage was instituted. His general condition during the next two or three weeks was poor and we did not attempt to do the second stage of his operation until his general condition had improved. On October 29th, under a light ether anesthesia, the suprapubic wound was enlarged with the finger and the prostate was enucleated. It was rather firmly adherent and we had some difficulty in reaching it, but the operation did not take more than eight or ten minutes altogether. There was very little bleeding and it was controlled with hot saline irrigation and no gauze tampon was necessary. A tube was introduced into the upper part of the wound in the bladder. The rest of the opening into the bladder was tightly sutured around the tube. His convalescence was uninterrupted. He first voided his urine on or about the tenth day. The tube was removed at the end of seven or eight days and the wound was entirely healed at the end of two weeks. Since that time there has been great improvement in his general health. He holds his water from four to five hours at a time, has no difficulty of any sort, has gained weight and is in better condition than he has been in ten years.

The second case is that of a man 71 years of age, who gave a very similar history to that of the previous case. He was admitted to the hospital on August 13, 1913, with complete retention and a history of chronic prostatism extending over fifteen years. On August 15th under local anesthesia, a suprapubic cystotomy was done and tubal drainage instituted. On August 27th, under ether anesthesia, a suprapubic prostatectomy was rapidly done.

In this case there was a good deal of bleeding and a gauze pack was introduced to control the bleeding. In this patient voluntary urination was delayed on account of a bridge of cicatricial tissue which was dilated with sounds, after which the patient had no difficulty in urinating and has experienced no difficulty since. His recovery has been equally satisfactory.

We have had in our service ten cases of prostatic trouble in which we have done the suprapubic operation in two stages. All of these cases have survived the operation and one has died since from some intercurrent disease, but the rest of them have remained well.

The two-step operation, I believe, is much the safer method, and it seems to me that in these cases the prostate shells out more readily and less time is consumed, there is less traumatism, and I believe very much less danger of hemorrhage.

I think the important thing in these cases of prostatic trouble is to see that our patients survive the operation, and I believe the likelihood of operative death is much less from a two-stage operation than from a one-stage operation, whether there is infection of the bladder or not.

In answer to a question by Dr. J. R. Kevin as to what the detailed after-treatment in these cases consisted of, Dr. Sherwood said:

"It is very simple. The tube is left in the bladder for about a week, at the end of which time it is removed and the urine allowed to drain into the compresses. Shortly after the removal of the tube they begin to pass urine quite promptly. There isn't any treatment except in infected cases, in which event we irrigate the bladder and introduce a 10 or 15 per cent solution of argyrol. We always keep them on urotropin and always get them out of bed as soon as possible."

**Angulation of the Sigmoid. Result After Resection. Patient.
Cases Illustrating the Conservative Treatment of Fractures. Patient.
Radiographs.**

By W. A. Sherwood, M.D.

DR. WILLIAM F. CAMPBELL, in opening the discussion, said:—"I think that we are very wrong in terming this condition which Dr. Sherwood has described as angulation of the sigmoid, for the reason that angulation of the sigmoid does not describe the pathological process. Angulation of the sigmoid is secondary and not primary. Angulation of the sigmoid is a result and not a cause. I think that we should term this just what the pathology implies, namely, a membranous perisigmoiditis. As you know, the sigmoid is the movable portion of gut connecting the descending colon with the rectum and there is always, normally and naturally, an angulation where the loop joins the rectum. That angulation is more acute when the sigmoid is loaded than when it is empty. It is more acute in the upright than in the prone position, but just so long as the sigmoid is movable that angulation is not pathological. As soon as it becomes ankylosed by adhesions then the angulation becomes pathological. The sigmoid is nothing more than one of those stations along the intestinal tube where we are apt to have intestinal stasis and when this intestinal stasis becomes more than normal we get a mild infection and as a result we get these pseudo-membranes. We find them in the ascending colon in our membranous pericolicitis, because there we get an antiperistalsis and the fecal current is slow at that point. We get them also at the terminal ileum (Lane's kink), and there is another point where we get fecal stasis and sometimes a mild infection, at the sigmoid flexure, and I think that should be really called a membranous perisigmoiditis.

"In reference to Dr. Sherwood's cases of conservative treatment of fractures, had I been on the program I also could have presented a case of conservative treatment of fracture, a case of a man about 40 years of age who also had a fracture of the tibia. He has been in the hospital ten weeks and has non-union. I imagine that what Dr. Sherwood tried to illustrate here was not that all these cases should be treated conservatively, but that we should exercise a nice surgical discrimination and treat those conservatively that are so indicated, but in selected cases it seems to me that we must not ignore the use of the open operation and Lane plate."

DR. THOMAS B. SPENCE, in discussion, said:—"I cannot quite agree with the last speaker in the pathology of the sigmoid. I have seen cases that undoubtedly did cause some obstruction, some stasis, where there was no perisigmoiditis, where the loop of the sigmoid was perhaps abnormally long and caused an angulation. I have seen one case of acute obstruction with an angulation of the sigmoid which was relieved by pulling the sigmoid up. That was a case following operation for appendicitis. The patient had a movement of the bowels immediately after the operation, on the table. Nothing more was done with that case. She got well and she did not have a perisigmoiditis and I don't think that it is necessary to have a perisigmoiditis to have the symptoms we get in some of these cases. It is true in many cases, probably a majority of them, but in some we have symptoms without any evidence of perisigmoiditis.

"We cannot criticise the case shown tonight in the matter of treatment, but only today I had an experience with the Murphy button. Six weeks ago I had one of these cases of so-called angulation of the sigmoid and the patient was not in very good shape. I wanted to hurry my operation as much as possible and I used a Murphy button without resecting the sigmoid, the Murphy button joining as nearly as possible the lower end of the descending colon and the upper end of the rectum. She did very well, but did not pass the button and after ten days began to show symptoms of inflammation about the region of the sigmoid. She had a good deal of pain and continued in that way for about six weeks without discharging the button. She got so very miserable that I felt constrained to take the button out today. I found that the button had gotten loose from the point of anastomosis and it was evidently slipping up and down in the rectum and the lower loop of the sigmoid, but it was coated over with a thick, hard mass of feces and would not pass down through the rectum. I attempted to shove it out, but I could not do it, partly, I think, because of the surrounding inflammatory condition closing up the Douglas cul-de-sac. I do not think that I will use a Murphy button again in that region."

DR. WILLIAM F. CAMPBELL, in discussion, said:—"I didn't make myself quite clear. Evidently Dr. Spence has made my statement even more clear. I didn't say that there is not such a condition as angulation of the sigmoid, but that the case reported by Dr. Sherwood should be termed a case of perisigmoiditis. I think the case that Dr. Sherwood reported should be known as a membranous perisigmoiditis."

DR. WILLIAM LINDER, in discussion, said:—"I wish to state that my preference, particularly in the large gut, has been to do a large lateral anastomosis. I have always been afraid of Murphy's button. Wherever there is a discharge of solid or semi-solid fecal material it blocks up the button. I feel the few minutes consumed in doing a large anastomosis well repays one in doing it and not using the Murphy button. I only use it in the small intestines where we have fluid contents. I think we have all had the same experience, namely, that sometimes the Murphy button perforates through the large intestine and produces a general peritonitis."

Cases Illustrating the Advantage and Results of the Two-Stage Operation for Hypertrophied Prostate. Patient.

By W. A. Sherwood, M.D.

DR. J. RICHARD KEVIN, in discussion, said:—"The reason I asked as to the detailed treatment following the doctor's case was that a recent case that I had about two weeks ago, in which the patient was eighty-two years of age, I did in a one-stage operation, because of the fact that irrigation of the bladder showed that there was no cystitis of any consequence.

"The history of the case was this:

"He had been a catheter case for twelve years entirely. It was easy to get into the bladder, comparatively easy. I found when opening the bladder and when the prostate was removed that the deep urethra was peculiarly large and that accounted largely for the fact that the urine was obstructed except by the catheter. It was also a sacculated bladder.

"There is another point, I think, in some cases (I carried it out in this man), and that is that they get more comfort by irrigations following, much more comfort owing to the fact that many clots block up the canal. Unless you keep your irrigation up to some extent your patient is in great discomfort. In this case I maintained the drainage both ways, placing the catheter below and retaining it there for three days, and had the interne irrigate every four hours for the first twenty-four hours and thereafter three times a day. The irrigation is simple, and the man has had no difficulty, his convalescence is perfectly comfortable and he is up and about, urinates, and the external opening is still draining.

"I think another detail in getting good drainage and in getting quicker results, and another reason why I believe in the general anesthetic, is that as, in this instance, the general anesthetic was given before opening the bladder. I filled the bladder with boric solution, distending it as much as possible, and then with two loops, one on either side where the incision was made, I was enabled to make my opening (suprapubic) as high as possible, as near the peritoneal cavity as possible, without going into it. I believe that they drain better and they heal quicker thereafter and it is a much more simple way of getting into the bladder without undue destruction of other tissue."

DR. RUSSELL S. FOWLER, in discussion, said:—"This is a most interesting subject.

"The point that Dr. Sherwood makes is that the mortality is very much less after a two-stage operation than after a one-stage operation. I looked up my statistics this afternoon in these cases and I found that my mortality from the one-stage operation, whether perineal or suprapubic, was very much higher than after the two-stage operation. These statistics include those cases in which form only a prostatectomy was done at the same time that the retention was relieved in acute cases. Of the two-stage operations I find I have lost just one out of fifteen and that was a case of carcinoma of the prostate, which I think would hardly be counted in this kind of statistics.

"It would be interesting if this society would have a committee to look into the prostate question as to the prostates operated on by general surgeons and form some statistical table therefrom."

Angulation of the Sigmoid. Result After Resection. Patient.

Cases Illustrating the Conservative Treatment of Fractures. Radiograph. Patient.

Cases Illustrating the Advantage and Results of the Two-Stage Operation for Hypertrophied Prostate. Patient.

By W. A. Sherwood, M. D.

DR. WALTER A. SHERWOOD, in closing the discussion, said:—"In regard to Dr. Campbell's comment on the name of this condition which we call angulation of the sigmoid: I am inclined to think that the large majority of these cases are due to a membranous pericolicitis. In the case presented tonight there

was no evidence of a membranous pericolicitis, except at the brim of the pelvis where the redundant loop of sigmoid dipped down into the pelvis, and I think that was a result of the condition rather than a cause. Further, there was no evidence of perisigmoid trouble. I do not think that angulation of the sigmoid is a good name for it, but I have been content to use the same name that has been used by other men to describe the same condition.

"In regard to the Murphy button: I rather assume that I will be quite alone in making the statement that I believe it is the best method to use in this particular location. In several instances I have had a great deal of difficulty to get up into the wound for proper manipulation in this part of the sigmoid flexure. It seems to me to be very much simpler, quicker and safer as far as I am concerned, to apply a Murphy button in this situation. I do not recall any difficulty as the result of its use in this location. I forgot to mention the fact that the patient did not know that she passed the button. We instructed the nurses to watch the stools and they did so, but the button came away without the knowledge of either the patient or nurses. We verified this by an X-ray picture showing the absence of the button.

"In regard to Dr. Campbell's comment on the conservative treatment of fractures: I meant to emphasize that I would not recommend this treatment in many cases of this sort, but simply presented them to show what can be accomplished in these cases of fracture with a great deal of displacement, and I think they are illustrative of the general conclusion that we do not have to use the open operation and Lane plate as frequently as we have recently been led to believe. We must carefully select our cases.

"I think that the President has expressed what I intended to express about the two-stage operation for hypertrophy of the prostate. My contention is that it is efficient and it lessens mortality, and I think that any operation which lessens mortality should be accepted."

Paper: "Lexer Operation for Ventral Hernia."

By Carl Fulda, M.D.

DR. WILLIAM LINDER, in opening the discussion, said:—"There is one objection to using silver wire. I lately read a paper where a Russian surgeon raises the objection that the wire not only comes out, but in two or three instances in his experience the wire worked itself into the peritoneal cavity and produced ulcerations and adhesions to the gut, and in one patient with a ventral hernia he found this wire imbedded in a mass of adhesions, producing a fecal fistula, and this fecal fistula in turn produced a local peritonitis. That is the only objection to using silver wire that I can see."

DR. CARL FULDA, in closing the discussion, said:—"As far as Dr. Linder's objection is concerned, Lexer continues to report these cases, and I find nowhere in any of the monographs on hernia any mention of such a condition. Dr. Ferguson, of Chicago, spoke of the sutures coming out under the skin, but he does not mention that it might enter into the abdominal cavity. Still I suppose it is possible."



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PROGRESSIVE PERNICIOUS ANEMIA WITH GASTRIC CARCINOMA—REPORT OF A CASE.

By

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and

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Flushing, New York.

and

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Flushing, New York.

HISTORY AND PHYSICAL EXAMINATION BY DR. HOUGHTON.

THIS case of progressive pernicious anæmia and gastric carcinoma is reported for reasons which will appear in the discussion. The patient was referred by Drs. Perry and Schoonmaker, of New York, for investigation.

C. F. W., aged sixty-six years, married and a traveling man.

Complaint.—He has absolutely no complaint to make except that for nearly two years he has been progressively growing weaker. He has no gastro-intestinal symptoms of any kind except a little belching of gas, twice or three times a week.

Previous History.—Never sick until the second decade of life when he suffered from billious attacks, characterized by nausea and vomiting. They recurred about five times a year and never lasted longer than twenty-four hours. After the eighteenth year they ceased. During the third and fourth decades, he had several attacks of jaundice. In the fifth decade he suffered some from rheumatism, and at one time was sufficiently troubled with this so that he spent a month at Mount Clements. For several winters past, has had bronchitis. Eighteen months ago he had an attack of grip from which he never recovered his strength. Since that time, he has been steadily and slowly growing weaker. At times he belches some gas, but states that it is no worse now than it has been for several years.

Habits of Life.—For years he has been obliged to take Rochelle salts once a week. At other times, he has secured evacuations without aid. Latterly the stools have always been of a very foul odor, and he has passed considerable gas which is likewise very much of the H₂S variety. From a member of his immediate family I learn that his habits as to eating have been as follows: Unusually heavy eater. Fried foods



PLATE A—ONE-HALF HOUR.



PLATE B—TWO HOURS.

in relative excess. Two eggs daily. Meat always twice daily, and sometimes three times. His weight is now 140 pounds (usually 160 pounds). Does not smoke nor use alcohol.

Physical Examination.—One would hardly have missed the diagnosis of progressive pernicious anemia from his appearance—the characteristic yellowish white color with the wrinkling due to loss of subcutaneous fat. The eye reflexes are sluggish or absent. The whites show deposition of bile. The mucous membranes are pale. There are small petechial hemorrhages into the buccal mucous membranes. The upper teeth are false, and the lower not cleanly; many out, with suppuration about the contiguous gums. He gives a history of foul mouth of many years standing. Left cardia, slightly enlarged, with small hæmic systolic murmur and slight aortic regurgitant murmur. The systolic arterial pressure is 110 millimeters and the diastolic 48 millimeters by the auscultatory method. The lungs show areas of marked emphysema and bronchitis with characteristic rales of infiltration at the bases, more particularly on the right side. The liver is normal in size. The spleen can be palpated but the enlargement is very moderate. The abdominal muscles are slightly over-rigid. The prostate gland on palpation has a slight enlargement of the right lobe, but causes no symptoms. There are a few small petechial hemorrhages into the mucous membranes of the rectum and sigmoid as shown by proctoscope. The legs are markedly œdematous.

PATHOLOGICAL EXAMINATIONS BY DR. HALLSTEAD.

Examination of the Urine.—Total amount in twenty-four hours was 1,866.0 cc. Color—light yellow. Sediment—light yellow, granular, cloudy. Sp. grav.—1.012. Reaction—neutral. Albumen—++. Sugar—0. Indican—unable to decolorize with 5 cc. 10 per cent solution of KCIO_3 *. Diazo-reaction—negative. Reactions for di-acetic acid, acetone, and bile, all negative. Casts—numerous hyaline, few granular and few fine fatty. Few kidney and bladder cells. Numerous leucocytes.

The hæma-uro-chrome test for cancer was positive.†

Examination of the Blood.—Hæmaglobin—62 per cent. Blood Index—1.6. Total erythrocytes—1,832,000. Total leucocytes—8,440. Differential leucocytes count—

Poly-morpho-nuclears	62 per cent
Small mono-nuclears	23 per cent
Large mono-nuclears	9 per cent
Eosinophiles	1 per cent
Mastzellen	3 per cent
Transitionals	2 per cent

(300 cells counted)

* A method of roughly estimating quantitatively the indican of the urine. Obermeyer's solution is used and the indican precipitated with chloroform as usual. The overlying solution of reagent and urine are syphoned off and the colored chloroform is treated with a 10 per cent solution of KCIO_3 . A normal amount of indican will be decolorized by two to five drops.

† The hæma-uro-chrome test for cancer was proposed by Davis (*Amer. Journ. Med. Sci.*, 1913, cxlv, 857), and is supposed to react also in sarcoma. I have tried it in twenty-two cases of malignant growth, and have secured always positive reactions. No reactions have been positive in other diseases tried. The chromogen is not known.



PLATE C—FIVE AND ONE-HALF HOURS.

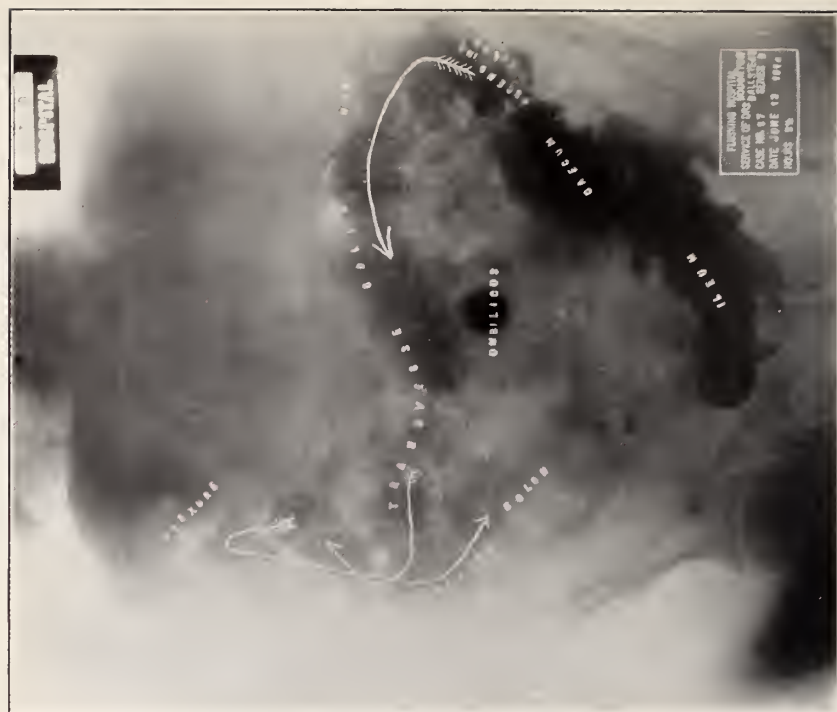


PLATE D—EIGHT AND ONE-HALF HOURS.

Numerous erythroblasts were present. Anisocytosis was marked, both macrocytes and microcytes being present.

The Wassermann reaction was negative (Board of Health).

The Examination of the Stomach Contents.—Amount for test—12 c. c. Macroscopic—food residue, blood in clots and apparently in solution. Mucous. Hydrochloric acid—absent. Lactic acid—present with both Uffelmann's and Gunzberg reagents. Microscopic—blood; food residue; Boas-Oppler bacilli in large numbers. Large numbers of large polygonal cells with prominent nuclei (probable cancer).

The stool examination after test raw beef sandwich is given below.

THE RADIOGRAPHIC STUDIES BY DR. SATTERLEE.

Test Meal: Three ounces of bismuth sub-carbonate emulsified in three half-pints of zoolak, taken at 2.30 P. M. (Photographs taken on Eastman films.)

A. One-half hour after meal. Stomach well filled. Position and shape normal. Some bismuth is seen in the small intestine. Motility rapid.

B. Two hours after meal. The upper third of the greater curvature shows a marked "moth-eaten" appearance, which is characteristic of the X-ray appearance of carcinomatous area. About half the meal has passed into the small intestine. Motility normal.

C. Five and one-half hours after meal. The stomach is faintly outlined by the residue of the meal adherent to the stomach wall. There is still considerable bismuth in the small intestine, and the arrow points out a constricted lumen, probably in the jejunum. The cecum is well filled and the appendix is seen curling back over the ileum. The ascending colon is well filled and a number of large fecoliths appear at the hepatic flexure. Motility normal.

D. Eight and one-half hours after meal. The head of the bismuth column has now reached the descending colon. The greater mass of the meal is still in the ileum, cecum and ascending colon. That portion which has passed into the hepatic flexure appears much lighter in shade, probably due to the mixing with the fecal matter in the transverse colon. Motility rapid.

E. Twenty hours after meal. The greater portion of the meal still remains in the ileum, cecum and ascending colon, although the transverse and descending colons are faintly outlined. The distal end of the transverse colon is somewhat ptosed. In this picture the transverse colon might be characterized as "dragon-shaped." There is considerable looping at the splenic flexure. Motility normal.

F. Thirty hours after meal. Very little change has taken place since the last picture. The cecum and appendix are well marked, the appendix looped upon itself. A single splash of bismuth remains in the ileum. Motility retarded.

G. Forty-five hours after meal. The transverse colon is now well filled, with a marked ptosis at the distal end, amounting to an angulation. Traces of the meal may be seen in the cecum and ascending colon while the head of the bismuth column faintly outlines the sigmoid flexure and rectum. Motility much retarded.

H. Sixty-eight hours after meal. The greater portion of the meal is now in the descending colon, sigmoid flexure and rectum. The marked ptosis at the distal end of the transverse colon seen in the last



PLATE E—TWENTY HOURS.



PLATE F—THIRTY HOURS.

picture is much modified in this picture, but the same looped appearance at the splenic flexure which has characterized the whole series is still well marked indicating, in all probability, adhesions. The residue of the meal may still be seen faintly outlining the cecum and ascending colon, indicating a very much retarded motility.

DISCUSSION BY DR. HOUGHTON.

It has seemed to me that this case, properly interpreted, calls into question the usually accepted theory that an uncomplicated gastric carcinoma may of itself produce a blood picture characteristic of progressive pernicious anemia. It appears from an analysis of the facts before us that the anemia antedated the carcinoma. If the reverse had occurred, *i. e.*, the gastric carcinoma had been the primary condition with blood picture of pernicious anemia, the patient would probably have been dead long ago. He has never had gastro-intestinal symptoms, except a little belching of gas—no pain, nor vomiting. The weakness, obviously from anemia, began eighteen months prior to our examination. We therefore believe that he really has two diseases—gastric carcinoma, and progressive pernicious anemia. The possible relationship of these two conditions may be discussed in general as follows:

All cases of gastric carcinoma most certainly do not show the characteristic blood signs—nucleated reds—of pernicious anemia. The majority show simple anemia of a severe type, but the positive evidence of hemolysis, of severe and rapid blood destruction with evidence of tremendous effort on the part of nature to restore, which is so characteristic of pernicious anemia, is not always found in carcinoma. The anemia may be more profound in gastric carcinoma when the location of the tumor is such that chronic obstruction obtains, the patient thereby not being able to avail himself of protein intake. But the evidence of true pernicious anemia is not always an accompaniment even in this combination of carcinoma and obstruction. We are, therefore, permitted to assume that some other factor than the carcinoma must determine the blood picture of progressive anemia occasionally found in cancer.

Further evidence may also be presented. We have been making a study of the fecal bacteria in some cases of this type, and also in cases of enterogenic nephritis with hypertension. The procedure is as follows: One part of stools (drawn from the rectum into a sterile tube) is added to 100 parts sterile water and mixed. Slides are treated with Gram stain, and counterstained. A differential count is made based on the staining reactions and the morphology. In the following table the first column contains the percentages of each variety as determined by MacNeal, Latzer and Kerr* who examined 266 stools from twelve college men on a diet low in protein and high in cereals. In the second column is the differential count from a case of kidney irritation with moderately high blood pressure presumably of enteric origin. This count, as will be seen, is approximately normal. The third column contains a differential count from a case of progressive pernicious anemia in the wards of Flushing Hospital on the service of Dr. Dick, through whose courtesy I was permitted to examine the patient. There did not appear to be a gastric carcinoma present. The fourth column contains the results of the examination on the case reported above.

* MacNeal, Latzer and Kerr, *Journ. of Infectious Diseases*, November, 1909.



	Ward Patient.			
	Normal	Enterogenic Nephritis	Pernicious Anemia	Above Case
Gram negative—				
B. coli type	45.9	47.0	21.3	20.4
Other negative rods.....	25.3	26.0	9.6	10.8
Negative cocci	8.4	9.7	11.6	9.2
Gram positive—				
Positive rods	5.7	6.0	44.9	44.6
Positive rods with spores..	0.0			
Positive cocci	11.3	11.3	12.6	15.0
Oval, free spores	1.4			
Spherical, free spores	0.9			

The constant results obtained by a differential count of the fecal bacteria in these two cases, one of pernicious anemia complicated by gastric carcinoma and another presumably free from that complication as given by Dr. Hallstead is truly remarkable. I am quite aware of the feco-bacterial variations in pernicious anemia, but these variations do not favor a preponderance of Gram-negative organisms. Excluding the macro-endo-parasites, the opposite obtains. When gastric carcinoma leads to the blood picture of pernicious anemia, is it not a fact that we are dealing with two diseases, the former favoring the initiation of the latter? In other words, do not the gastric carcinoma and the precancerous stage lead to exactly the same condition which is found in uncomplicated pernicious anemia, viz., the phenomena of bacterial substitution in the colon—the relative disappearance of the *B. coli* and the ascendancy of the *B. ærogenes capsulatus* or the streptococcus or both? Is not the bacterial substitution in the colon a step in the mechanism of the production of nucleated reds in gastric carcinoma? Is this not further evidence that the blood picture of progressive pernicious anemia has its initiation in the enteron?

In establishing the diagnosis of gastric cancer, we were aided no less by the examination of the gastric contents than by the X-ray. The notable feature of this was the fact that all of the characteristic signs usually considered accompaniments of stasis—the Boas-Oppler bacillus, lactic acid and blood—were present in the test meal notwithstanding the obvious absence of stricture. The X-ray demonstrated the carcinomatous infiltration to be on the greater curvature, away from either sphincter. It had progressed sufficiently to infiltrate the hepatic flexure as shown by the presence of adhesions in this region between the posited transverse colon and the colon descendens. The test meal was withdrawn one hour after ingestion, and the blood was evident. The gastric hypermotility as shown by the X-ray was also demonstrated in that the meal had almost entirely passed on, leaving but little which could be recovered. A diagnosis of gastric carcinoma therefore, which depends on stasis from obstruction, may be of value, but if we depend on the absence of the stasis for a negative diagnosis, there is an appreciable percentage of cases in which the diagnosis will be in error. The typical "cancer cell" was also present microscopically in this specimen.

There are several features connected with the radiographs which deserve especial attention.* The gastric hypermotility was undoubtedly

* NOTE.—The arrow indicating the line of direction in the sixty-eight hour picture, at the junction of the transverse with the colon descendens, is incorrect. Examination of the plate by use of the stereoscope shows a direction as indicated in the forty-five hour picture.

due to the irritation of the cancer. From the ileo-cecal valve downward the end-motility was in the main very slow. The only explanation which can be given for this is the anomalous condition of the colon, evident by referring to the radiographs. It cannot be laid to the anemia, as we have found many cases of similar deformities in the colon, associated with similar motility, in which pernicious anemia, or anemia of any sort was absent. In our investigations into the typical cases of enterogenic nephritis, in which every patient has had a deformed colon, the motility was sometimes slow, and sometimes normal. The deformed colon, however, in our experience, has led to the presence of fecolithiasis in every case, irrespective of the motility, and furnishes the determining factor in this class of cases for persistent indican in the urine, which ordinary catharsis and colon irrigations will not relieve. Our case, above reported, also discloses the same curious formation of scybalous masses of fecal material, which do not show a tendency to move onward in succeeding pictures. Finally, the curious twist of the sigmoid flexure—the first one I have ever encountered—as shown in the final picture, would certainly tend to produce further stasis, and more prolonged anaerobic conditions favoring the establishment of abnormal fecal flora. I am unable to attribute any significance to the peculiar “dragon-shaped” transverse colon of which so much has been made by many radiologists. It is obvious that the portion to the right of the umbilicus, which has the concavity upward as shown in the twenty-hour picture follows the curvature of the loaded stomach. The condition is probably of no more importance than indicating that fact.

We greatly regret not being able to present sulphur partitions on a constant diet. The results would have been interesting but it is doubtful, in view of what has been accomplished along this line whether we should have been any further informed as to putrefactive processes in the intestine than is yielded by the simple indican test. Dr. Hallstead reports that he was unable to decolorize with 5 c. c. 10 per cent $KClO_3$ solution. The addition of this reagent further oxidises the indican into colorless isatin, and the amount required gives a rough index of the quantity present. The amount of indican in this specimen must have been enormous. I believe that in those cases in which the differential bacterial count of the stools indicates a normal flora, or where partial substitution only has taken place, the simple indican reaction in the urine is as reliable a clinical test for abnormal bacterial disintegration of protein in the intestine as any of the more elaborate examinations. My reasons for this statement are as follows: The tryptophane content within the protein molecule runs very constant on a general diet. The *B. coli*, even under anaerobic conditions is unable to attack native albumen but does yield large quantities of indol, the precursor of indican. The anaerobics are unable to yield indol to any extent, but they are able to disintegrate native albumens. The production of indol in the intestine therefore is a manifestation of symbyotic activity or the first break in the albumens to the amino-acid stage must be accomplished by the pancreatic juice, the yield of indol again being largely dependent on the *B. coli*.

For all practical purposes, the indol which appears in the urine as indican is largely a manifestation of coliform activity. Where the phenomena of substitution is complete (there have been a few such cases of pernicious anemia reported) one would hardly expect in view of these facts to find a large quantity of indican in the urine. This may

account for the fact that in many cases of pernicious anemia, the sulphur partitions have shown low indican values, or variable values generally in the aromatic sulphur excretion. If the cleavage of tryptophane does not yield indol, what end-products may be looked for? It is exceedingly difficult to say without having some "complete" urinary examinations at hand for study, a procedure which I believe has never been done, especially in conjunction with bacteriological and chemical analysis of the feces. We have heard much of skatol as a possible end-product and in late years of indol-acetic acid. On the other hand we cannot be sure that the end-product is not some substance which is more easily oxidised than any of these ring compounds mentioned, so difficult to break up in the organism. Roughly, 50 per cent of these derivatives mentioned are disintegrated in the organism between the intestine and the kidney anyway, and the amount found in the urine, is but a fraction of the whole elaborated, when the amount passed in the feces is taken into consideration. We have also to think of the substances mentioned as passing into the urine in combination with glycuronic acid and which escape detection unless especially sought for, the laws governing the selective union of which we know little or nothing. In our case then, the pathological examinations verify the theoretical deductions. There are a sufficiently large number of *B. coli* type in the differential count to justify the presence of a large excretion of indican, and also justify the use of this method of roughly gauging the intensity of putrefactive processes.

This suggests a hint to be utilized in the diagnosis of progressive pernicious anemia. If with normal differential bacterial count in the stools, and low values as to indican or aromatic sulphur excretion in the urine, a patient is presented with a blood picture of progressive pernicious anemia, the presence of macro-endo-parasites can immediately be suspected. I have not had experience with infections of this type, but by analogy, judging from the effect produced by other intestinal parasites, such as tape-worm, no large deviation in the differential bacterial count would be found.

We have certainly arrived at a point where in the diagnosis and treatment of pernicious anemia, the condition should be wholly regarded as a symptom and a qualifying adjective used to indicate its genesis. In the examination of such a case, the eternal question "why?" should always be persistently asked. Are we sure that some macro-endo-parasite is not at work? This factor can only be excluded with certainty by long and tedious fecal examinations. Our case certainly shows that gastric carcinoma is a complicating factor far more often than is usually supposed, for unless the routine examination had been persistently carried out this condition would have escaped notice, in the absence of gastro-intestinal symptoms of any kind.

The association of the gastro-intestinal tract with pernicious anemia dates to the days of Austin Flint (1860), who noted degenerative changes in the gastric mucosa. Senator made the next connection by showing that there was an increase in the output of urinary indican and total ethereal sulphates. This was only four years after Jaffé traced the indican of the urine to the indol of the intestine. Since that time, the association of mild intermittent diarrhœas, history of prolonged dyspepsia, occasional mild febrile attacks, and achylia gastrica with severe blood changes and the appearance of nucleated reds has been noted so frequently that there are few careful clinicians who were not ready to believe that the enteron and the blood picture stood in

the relation of cause and effect. Chronologically, next came the discovery by Nothnagle (*Ztschr. f. klin. Med.*, 1882, iv, 422) of intestinal atrophy, as shown on microscopical examination, and the literature of the next few years teems with arguments, pro and con. Garlach (*Deutsch. Arch. f. klin. Med.*, 1896, lvii, 83) finally showed that the so-called appearance of atrophy was in reality due to post-mortem changes. This view is still held largely today in Germany. The last publication on this point is that of Schlaeffer (*Deutsch. Arch. f. klin. Med.*, 1910, c. 448) who presents a beautiful colored plate showing the atrophy, notwithstanding the fact that v. Noorden and others equally noted have denied the fact; at least so far as it applies to every case.

Grawitz is the chief exponent of a gastro-intestinal theory in Germany today and he holds that the disease may occur with or without changes in the intestinal mucosa (*Berl. klin. Wochen.*, 1901, Nr. 24 and 1904, Nos. 25 and 26) but that its causation is to be found in the enteron.

Hunter's work (*The Lancet*, 1888, 1889, 1890) brought things to a definite focus in his theory of oral sepsis though the theory has never of itself been widely accepted.

It has always been a source of regret to me that the work of our own Dr. Herter has never received the recognition which it deserves in Germany, where he was well known. In no literature that I have seen has it ever been mentioned, but as a classical investigation it should be given first rank. To be sure he did not denominate in the title that it was pernicious anemia that he was investigating, though the words occur in the script (*Journ. of Biol. Chem.*, 1906, ii, 1). Most elaborate observations are recorded as to the bacterial conditions in the enteron and the chemistry of the changes in the enteric contents. The conclusions he reached were that the anemias of a severe type are caused by the phenomena of substitution taking place in the enteron, whereby the *B. ærogenes capsulatus* assumes a dominant position, and that associated with this organism were large numbers of a streptococcus. He also indicated that the toxic substance which dominated the chemistry was ammonium butyrate, which with other higher fatty acids had been shown to have hemolytic properties.

The line of investigation has since changed to inquiry concerning the possible role of non-volatile fatty acids as part of the mechanism in the etiology, and also the hemolytic qualities and association of the *B. ærogenes capsulatus*. Without making an effort to review all the literature on the subject which would be quite impossible at this time, it is interesting to note the constant clinical and experimental association with the enteron. For instance, Berger and Tsuchiga (*Deutsch. Arch. f. klin. Med.*, 1909, xcvi, 252) found a lipid substance in the intestinal mucous membrane of pernicious anemia subjects which cause definite hemolysis. Ewald was unable to confirm this in one case (*Deutsch. Med. Wochen.*, 1913, xxxix, 1300). Faust and Tallquist have added two interesting contributions to this subject. The first (*Arch. f. exp. Path. u. Pharm.*, 1907, lvii, 375) showed that the unsaturated fatty acids (especially oleic) acted as hemolytic agents. The second (*ibid.*, 1912, lvii, 375) that the toxic properties of the bothriocephalus latus was undoubtedly dependant on a lipid substance which they believed to be oleic acid.

It is a curious connection made by Tamura (*Ztschr. f. physiol.*

Chem., 1914, lxxxix, 289) that the action of the Gram stain is dependant on lipid substance within the bacterial cell.

From a bacteriological standpoint, and notwithstanding the fact that Kamen (*Centralbl. f. Bakt.*, 1904, i Abt., orig. xxv, 554, 686) had previously failed, Werner (*Arch. f. Hygiene*, 1905, liii, 128) succeeded by the use of special technique, in securing agglutinative reactions with the *B. ærogenes capsulatus*, using the blood of pernicious anemia patients. This was confirmed by Passini (*Münch. Med. Wochen.*, 1904, li, 1283). The *B. ærogenes capsulatus* does not elaborate extra-cellular toxins, but the intracellular have been shown to have hemolytic properties by Lüdke and Fejes (*Deutsch. Arch. f. klin. Med.*, cix, 430). Other bacterial toxins also produced the blood picture of pernicious anemia.

Still further evidence along this line, involving bacterial activity in the enteron has made its appearance. It is to the effect that some of the amino bases may be concerned in the process. As is well known these are the substances which are modern representatives of the "ptomains," originally discovered by the Italian, Selmi, and further investigated by Brieger. They are amino-acids from which the terminal group COOH has been removed—in other words they are reduction products and act as reducing agents in the organism. Their elaboration takes place in protein putrefaction under anærobic conditions, and is capable of being accomplished by numerous anærobics and facultative ærobes. One of these is oxyphenyl-ethylamine, the short name for which is "tyramine" owing to the fact that its mother-substance is tyrosine. From Japan comes the statement that repeated doses of this base cause the blood picture of pernicious anemia (*Iwao-Biochem. Ztschr.*, 1914, lix, 436). Considering its relations with oxygen—or rather its lack of relation—it would be rather surprising if it didn't do some damage to the organism. This observation, however, has a curious confirmation near-by. Koch (*Journ. Biol. Chem.*, 1912, xii, 313) studied the urines of six parathyroidectomized dogs and found in all six the base methyl-guanadine. B-imid-azol-ethylamine (from histidin) in three urines out of the six, choline in three out of five and neurine in large amounts in one. B-imid-azol-ethylamine is the substance to which Vaughan (*Protein Split Products*, p. 291) refers the toxic power of protein, and is, perhaps the prime factor in the etiology of anaphylactic shock (Barger and Dale, *Pro. Chem. Soc.*, 1910, xxvi, 128). Taking into consideration that this work is from Vaughan's laboratory where the technique along this line has been the subject of study for years, it deserves more than usual credulence. In any event, this is what Koch says about the post-mortem on those dogs:

"The blood showed ante-mortem coagulation, white clots extended from the heart down the vena cava to the iliac bifurcation. Sections of the liver showed fragmented erythrocytes, many normoblasts, erythroblasts with mitotic nuclei and a small proportion of erythrocytes that stained brilliantly with eosin; the remaining red cells in large areas were blood shadows. Each section of the liver and lung, showed a number of large mononuclear cells with eosinophile granules. * * * Chromotolysis marked in all organs examined."

Inasmuch as there is not the slightest evidence to prove that the amino-bases can arise in the organism in any other manner than through the action of bacteria (so far as I am aware), this observation is interesting.

UTERINE CANCER—EXPERIENCE WITH IT AT ST. PETER'S HOSPITAL.

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THE experience with cancer of the uterus at St. Peter's has not been different from that in any gynecological service in a general hospital. However, the subject is of enough interest and importance to warrant review, and as we have some very definite ideas as regards treatment we may derive some benefit from a discussion of these cases.

One thing has struck us very forcibly, and that is the large number of cases which come to the hospital with involvement of the vagina, bladder and rectum, in fact in the last stages of the disease, if one can so speak. This may be accounted for by the extreme ignorance of the majority of the patients we see. There are many Italians among the women examined, and the task of educating them to the idea of a vaginal examination or to report any increase of vaginal discharge or a typical bleeding is a difficult one. Most of them wait for pain, and the idea that pain is the symptom of cancer is still prevalent.

It has been the teaching of the service that cancer of the uterus should be considered as dividing itself into two clinical groups bearing no relation to each other, as the progress and behavior of the two forms of uterine cancer is markedly different. It is superfluous to say that cancer of the body of the uterus is of slower growth and extension than cancer of the cervix whether the latter be of the canal or portio vaginalis. It is only when the disease has extended downwards into the cervical canal or has started near the internal os that one fails to secure a cure by hysterectomy, either abdominal or vaginal, and as the majority of women with corporeal carcinoma present themselves before radical operation is impossible the condition is not so desperate as in cervical cancer.

On the other hand, extension of cervical cancer is rapid, and in a comparatively short time after the onset of symptoms the hope of complete cure is a remote one. It is with cancer of the cervix that we are most interested, and the ideas of the service are fairly well defined. The treatment has been vaginal hysterectomy by the combined clamp and ligature method. After the cervix has been cleaned well with curette and cautery a circular incision is made around the cervix at the cervico-vaginal junction, or further out on the vaginal wall if necessary. The bladder is then separated from the anterior surface of the cervix and the peritoneal cavity opened in the vesico-uterine space, care being taken to separate the tissues well out on the broad ligaments. The cul-de-sac is then opened, and care is again taken to separate the tissues laterally as far as possible, so that with one finger in the anterior space and another in the posterior the bases of the broad ligaments can be palpated. The lateral pericervical tissue is then cut with scissors up to the uterine artery and as far out as possible without injuring the ureter. A Wight clamp is now placed on the broad ligament as far from the uterus as possible; at times this may be half an inch or more. The ligament is then cut close to the clamp on each side. The uterus is bisected and one half allowed to slip up into the pelvic cavity while the ligature is being tied around the top of the opposite broad ligament. A Cleveland carrier is passed through the ligament between the ovarian artery and the round liga-

ment, and a double strand of No. 3 plain gut is drawn through. One strand is tied over the top of the ligament and the other down into the cut to the tip of the clamp, the whole being then surrounded by the ends of the lower ligature, thereby insuring complete hæmostasis. The ligament is then cut a short distance from the ligature and the stump allowed to retract after careful inspection. The other side is treated in the same way. The head of the table is now lowered and the intestines pushed well back, and a last look is given for hæmorrhage. The pelvic dressing is then inserted, and considerable care must be used in this procedure. The idea is to keep the intestines from coming down into the wound and between the clamps. Iodoform gauze soaked in vaseline is packed loosely back and forth between the clamps and the end allowed to come into the vagina. Gauze is then placed around the handles of the clamps to protect the vaginal walls from pressure. A soft rubber catheter is passed into the bladder with a clip so that the bladder may be catheterized without disturbing the clamps. The clamps and vaginal dressing are removed in forty-eight hours, and the pelvic dressing is not disturbed for seven days, when it is removed, the cavity gently cleansed and a light pack inserted which is changed every other day until the vault has healed.

We believe that we can get out further on the broad ligaments and include more parametric tissue by this method than by the suture method. It is a matter of common observation that if one inspects a uterus removed per vaginam by the latter method, the broad ligaments are cut very close to the uterus; at least this has been so in all that I have seen.

Vaginal hysterectomy is possible when there is not sufficient extension of the disease into the parametrium to interfere with the mobility of the uterus. We believe that any extension which can be felt only means that there is microscopic extension much further out toward the pelvic walls, and that it is a question if any operation can reach beyond the involved zone.

When vaginal hysterectomy is not deemed possible, for the above reason, and when the vaginal walls are not greatly, and the bladder and rectum not at all, involved, palliative operation by the electric cautery with knife and dome gives the best results. It is surprising how much material can be removed and the length of time that these patients are rendered comfortable and clean.

Since January 1, 1895, there have been admitted to the gynecological ward at St. Peter's 140 cases of uterine cancer. On reviewing the case histories it has been difficult to differentiate between cases of corporeal and cervical cancer as the distinction is not made in all instances. However, from the symptoms we have made a guess in some cases. They have been divided into four classes: (1) Those which were too far advanced for even palliative operation; (2) those which were subjected to palliative operation; (3) those which had a vaginal hysterectomy, and (4) those cases of corporeal carcinoma which had an abdominal hysterectomy.

There were fifty-five cases which were deemed inoperable on account of the extreme involvement of the surrounding tissues, a percentage of thirty-nine. The majority of these women were sent to a home for inoperable cancer cases.

There were twenty-nine cases in the second class who received palliative treatment. The results of these have not been investigated. The percentage of these is twenty.

There were fifty-three vaginal hysterectomies performed. Of these thirty-five were of the cervix and eighteen of the body, an operability of thirty-nine per cent.

There were three abdominal hysterectomies, or two per cent.

Of the vaginal hysterectomies six died, a primary mortality of eleven per cent. Five women were readmitted for recurrence, four within a few months and one two years later.

The remaining forty-two cases were written to with the request to come to the hospital for examination. Of these forty-two letters twenty-five were returned by the postal authorities. An attempt was made to locate these patients, but they could not be traced. They were of the poorer class and are notorious movers. Of the remaining seventeen cases two were of corporeal cancer and fifteen of cervical. Ten were operated upon over five years ago and seven within five years.

Of the ten cases operated on over five years ago one with cervical cancer lived fourteen years and died of some other condition. One lived ten years and died of pneumonia. One died two years after operation of cancer, one fourteen months and one one month after operation.

One patient who had vaginal hysterectomy for cervical cancer fifteen years ago is alive and well. Six years ago she developed a lump the size of an orange in the rectus muscle which proved to be carcinoma on microscopical examination. There has been no subsequent recurrence.

Two cases operated upon in 1903, one for corporeal and one for cervical cancer are alive and well. Two cases operated upon in 1906, both for cervical cancer, are well. Of these ten cases which we were able to trace who were operated upon over five years ago, three did not live five years, one lived fourteen, one lived ten and five are alive and well.

Of the seven cases we were able to trace who were operated upon within five years, one died of recurrence thirteen months later and five are alive and well, four, four years after operation and one, two years. One patient who was operated upon last April has recurrence and is in bad condition.

Of the eleven women who are alive and well, nine were of cervical cancer and two were of corporeal; that is, in this series of seventeen known cases there was no recurrence in the patients who had corporeal cancer.

Of the three cases who had abdominal hysterectomy performed, two died as the result of the operation and the other cannot be found. These operations were done early in the series.

The interesting point in this study is, of course, the preponderance of cases that were inoperable, from a radical standpoint, over those suitable for operation, ninety-four to fifty-six, and the operative results of the known cases prove that there were many beyond the operative stage by this method. Whether the radical operation of Wertheim or that of Schauta would have given better results we are not prepared to say.

No better example than this series can be had of the vital necessity of education of the public and, save the mark, of the profession in regard to cancer of the uterus and especially of the cervix. Even to say that every woman with abnormal bleeding should be examined by one qualified to diagnose cancer is not enough, as many of these

cases do not spot or bleed too much until it is too late to do any radical operation. It is the increase in the vaginal discharge that should be investigated, and the time has come when it is criminal to be indifferent to leucorrhea. The writer knows of women who have consulted their physicians for leucorrhea and have been told that it was probably female weakness or change of life, and they were given vaginal douches, etc., without the formality of a vaginal examination, the excuse being that the doctor had known them a long time and was familiar with their system.

Conditions have improved within the profession, but much more can be done. Every physician should inform his patient that a leucorrheal discharge is of the utmost importance and must be investigated.

(For discussion see page 400.)

BACTERIOLOGY OF SEWAGE DISPOSAL.*

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CONSIDERING sewage disposal historically as well as bacteriologically, we should discuss the effects of the methods of human wastes disposal mentioned by Dr. Williams as prevalent in towns in Sicily, for those customs undoubtedly prevail in some places on Long Island. Human wastes distributed indiscriminately in nature offer not only a direct means of contamination and infection of human beings, but become breeding grounds for flies, and the latter find both sustenance and means of disposal of their own and their associated human wastes in our homes, especially our kitchens. However, such indiscriminate distribution of wastes subjects them to the sterilizing and drying action of the sun, and thus some dangers may be reduced or avoided that are not obviated by the use of the more modern system of privies.

By the accumulation of moist wastes in privies opportunities for fly breeding are increased, although if the latter were properly constructed and maintained in a cleanly condition this menace could be obviated.

As flies can undoubtedly be the intermediary transmitting agents of the infectious elements of typhoid fever, dysentery, hookworm and other gastro-intestinal and systemic diseases, the proper construction and maintenance of privies is a most important rural health problem.

Privies may be the means of pollution of water supplies, but with the sandy soils existing on Long Island this is not a very common occurrence, as the sand offers a means of adequate filtration of the washings from privies before they reach the well waters, which are the chief sources of the water supplies of the Island.

In considering all human wastes and their proper disposal we must ever remember the existence of well carriers of human infectious organisms as well as the sick and the convalescents. We must prevent the infections which arise from the improper disposal of the carriers' infectious discharges. To do so requires the sanitary treatment of all human wastes.

* Read before the Annual Meeting of the Suffolk County Medical Society.

The disposal of human wastes into cesspools is a more modern and more satisfactory system. It has the advantage of preventing direct contamination of persons, animals, or objects during the time purification processes are in operation. However, they bring the contaminating or infectious materials closer to the sources of underground water supplies. Nevertheless, numerous observations go to show that with a fine sandy soil even this danger is not great when precautions are taken to separate the sources of water supply from the cesspool as far as possible. Of course cesspools must be cleaned, which is not unattended with some sanitary menace, and in time of excessive use of water or in the case of storms, etc., the cesspools overflow and provision must be made for the same. The usual course is to allow the overflow to pass into creeks or other tidal waters.

It is just such overflowing cesspools that constitute a direct menace to these waters, for at the time of any considerable overflow the sewage may pass without holding into the tidal waters. The septic action which takes place when sewage is held in a septic tank—and most cesspools are such to a greater or less extent—undoubtedly brings about the rapid destruction of the typhoid bacillus, although very direct conclusive scientific evidence of this is still lacking. However, the work of Whipple and of Russel and his associates in Wisconsin on the causes of the death of typhoid bacilli in different kinds of waters indicates a quick death of typhoid bacilli in septic tank contents held for twenty-four hours or more. What happens to dysentery bacilli and the other causes of diarrhœa are matters of conjecture only, but it is probable that these bacteria also die off, although more slowly than the typhoid bacillus.

On account of this progressive dying off of these infectious agents stress must be laid upon the directness of any pollution of shellfish or water supplies. A small amount of sewage directly polluting these products is a greater menace than a larger amount polluting only indirectly and after a longer period of existence of the sewage elements outside of the human body. This has been found true from the studies of oyster-borne outbreaks of typhoid fever. All such have come from direct pollutions of floating grounds where oysters have been temporarily stored before marketing.

In cases of sewage effluents from sewer systems we find many natural conditions which favor the destruction of the infectious agents of communicable diseases. Of these sedimentation is probably the most important. Sunlight, when direct, kills many of these bacteria. The antagonistic conditions developed by the growth of other forms of life in the water, bacterial as well as animal, are most important disinfecting factors. Strong tidal and wind currents tend, however, to reduce the value of these destructive agents.

Long Island communities need sewerage systems with ample provisions made for complete sterilization of the effluents from them, if the oyster beds of the state are to be conserved. Mr. Provost will tell you of comparatively simple and cheap methods of accomplishing these results. Sanitary engineers have been too prone to consider æsthetics as more important than complete sanitary safety, but we should hold to the modern slogan, "Safety First," and at almost any present cost, for in the long run safety is not an extravagance.

THE LEXER OPERATION FOR VENTRAL HERNIA.*

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SINCE 1894, the year in which Dr. W. J. Mayo published his first paper on the radical cure of umbilical hernia by the above down over-lapping method, all other procedures have been practically abandoned. That is true in this country at least.

If what these discarded methods sought to accomplish be borne in mind, and if the means employed be examined, then the reason for their abandonment will be plain. The operations of Gersuny, Blake, Kocher, Graser and Winslow were the ones most commonly used. They were alike in being tedious and complicated, and often entailed the use of enormous quantities of suture material, thereby inviting infection. Their aim was often identical and was based on the assumption that the separation of the recti was the salient point in the consideration of the etiology and cure of umbilical hernia. They were once termed plastic operations, as is the Mayo method, but the name was applied to them significantly, for the reason that they all employed more or less laborious procedures for the rectifying of the malformation.

Almost all patients who have umbilical hernias are corpulent individuals, and, certainly, a great number of ventral hernias are found in people of the same type. Not only their pendulous abdomen, but their hernia as well, brings about an erect position of the spine; the head, neck, and thorax being used to counterbalance the weight in front. They walk and stand much as pregnant women do. It will be plain, if this position be brought to mind, that a stretching of the anterior abdominal wall must take place. If such a patient be placed in the prone position as much as ten inches of slack abdominal wall can be found. It is this slack, as Dr. W. J. Mayo has termed it,¹ that he made use of in devising his imbrication method for the radical cure of umbilical hernia, and it is this same slack that the Lexer method takes advantage of in a somewhat different fashion.

The title, Lexer Operation for Ventral Hernia, is not altogether appropriate, since the procedure was employed originally for the cure of umbilical hernia. It has been found, however, that the method is equally efficacious in many types, at least, of ventral hernia. The cases suitable for this operation are very briefly described. They include all those hernias through the anterior abdominal wall in which a single, well defined point of exit is found. In other words, those cases are suitable ones in which we find, after reducing sac contents and cutting away the sac, a smooth edged, more or less circular opening.

It is not to be understood that this method is brought to your attention because the imbrication operation is not an efficient one. For the cure of the average case of hernia under consideration, no fault can be found with the Mayo method. The Lexer operation is offered with the one claim to approbation, in that it can be performed with greater rapidity than can any other method of which we have any knowledge. That the time required for the closure in these cases is an important factor, will be admitted. For it is true that in a great majority of cases that are brought to operation, strangulation has already occurred, and in a large majority of the remaining cases, the

* Read before the Brooklyn Surgical Society, March 5, 1914.

adhesions are so extensive that there is as much difficulty in freeing the adhesions as there was in dealing with the strangulation. "Those who most frequently require the radical operation, are unfavorable subjects for operation. They are usually corpulent, having both cardiac and renal disease. Even with simple irreducibility present, the necessity for a prolonged operation in order to clear the protruded mass of the extensive adhesions frequently present, and the difficulties attending the effort to replace the viscera within an abdominal cavity contracted by depositions of fat, combine to render the radical cure by operation in this class of cases one of considerable risk."² That is the experience of all who have had to deal with these cases. The time consumed in bringing about a reduction, in dealing with adhesions or strangulation is so great, that any effective method of closure which is easily and quickly done, should be familiar to every surgeon.

The operation as we have performed it in eight cases, is done in the following manner:

1. Resection of the sac in the usual way. When dealing with umbilical hernias, a vertical or horizontal elliptic incision is made and omphalectomy performed. The incision is carried down to the aponeurosis at once, the neck of the sac freed and incised in a circular fashion. Reduction of sac contents follows. So far, the operation differs little from most methods. The second step consists in the application of a purse string suture of thick aluminum bronze or silver wire, around the edge of the opening through all the abdominal layers, including peritoneum, but omitting skin. The third step is the drawing up of the wire suture, and finally there follows the skin closure. Dr. Lexer brought the rectus sheaths together with catgut from above and below, but that we have not found necessary.⁵

As to details of technic, it is to be said that a thick wire should be used. No. 20 is about the proper size, although I have used in some cases a number 16.

The twisted wire of Lilienthal is not at all suitable, for the reason that it always produces tearing of the tissues, which leaves small holes from which new hernias may emerge. Kinks or angulations are to be avoided for a similar reason. The needle to be selected should be one whose eye will just take the suture and make the smallest hole in passing through the tissues. The wire should not be twisted to keep it in the needle, for that too tears the aponeurosis. The suture is then passed in such a manner that it pierces all the abdominal layers except the skin. Entering at any point about half an inch from the opening, it passes into the peritoneal cavity and out through the hernial opening. Continued around the free edge from without inward, it is finally brought out half an inch from the point of entrance. Both ends now being on the outer surface of the abdominal wall, are made into a half knot and the purse string drawn down steadily and firmly. If the suture has been properly applied, it will be found impossible to pass the finest probe through the closure. One or two twists suffice to secure the half knot. The skin closures completes the operation.

Now, it is granted that some criticism may justly be made of this procedure. There is to begin with, the objection to the use of non-absorbable material. It has been found that although silver or aluminum, bronze or phosphor bronze wire that does not irritate the tissues, and remains in most parts without any disturbance, will, when used in hernia operations, gradually work its way toward the skin until it causes pain, and has to be removed.³ It may remain for a long time,

for years, or it may come out sooner. Two years after an operation for inguinal hernia done in another city, we removed from beneath the skin of a man of fifty, four silver sutures. In that time they had made their way half the distance to the umbilicus. However, three years have elapsed since we did the first Lexer operation, and no such occurrence has been noted.

Those large hernias in which the greater part of the abdominal contents have been protruded for a long time, are not suitable cases, nor should those openings be repaired in this way, which may be described as large defects of the anterior abdominal wall. Any attempt to draw down a purse string of wire in this type of case, has regularly led to a tearing of the aponeurosis, leaving new avenues for the escape of hernias.

Eight cases have been operated by this method. Four were umbilical hernias and two post operative ventral hernias. These six were in women, and two epigastric hernias in men. Of these eight, two were done three years ago; four, two years ago; one, one year ago, and one six months ago. Of the umbilical hernias one recurred. That was a hernia in a very corpulent woman and was the first case we operated by this method. Two mistakes were made. The wire selected was too thin, and as a result thereof, tore through the aponeurosis in several places. At the second operation, it was found that the second hernia had passed through one of these openings, but the original suture was as we had placed it. The old opening was closed. The other cases seen within two months seem to be cured, one and two years after operation.

Let me repeat that this procedure is not brought forward to replace the imbrication operation. That method has given me the very best results. But, when time is an important factor, as it is when dealing with strangulated or irreducible hernias, then an efficient, rapid method of closure is to be preferred. It may never become a routine operation, but it should be part of the equipment of every surgeon. Though not of the opinion that it is applicable to every case of ventral hernia,⁴ as is urged by Dr. Lexer, I do think that it has a permanent place in the treatment of that class of cases.

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SPASTIC SPINAL PARALYSIS.

REPORT OF A CASE OF THE HEREDITARY SYPHILITIC TYPE, WITH EXTRAORDINARY TOLERANCE OF THE IODIDES.*

Carroll L. Nichols, M.D.

MR. R. S., twenty-eight years of age, married, no children, proprietor of a bakery.

Patient's father dead, cause unknown; a Portugese by birth; he had been a sailor all his life.

His mother has had valvular heart disease and diabetes for several years.

* Read before the Brooklyn Neurological Society, April 1, 1914.

One older brother died in infancy; a second brother is alive and well; a third died, at the age of three years, of cholera infantum. He has no sisters.

Personal History.—At the age of five, whooping cough; at seven, measles; at nine, a severe attack of diphtheria; and from the age of seventeen on he has suffered with light irregular attacks of rheumatism, in both joints and muscles. At the age of twenty-two he had an attack of gout in conjunction with the rheumatism, and at about the same time a slight attack of pleurisy; and from this period he had not been well. These systemic conditions were referable, no doubt, to inordinate eating. All of the family were excessive eaters of rich foods, though none of them were of alcoholic tendencies; also the patient's occupation had a great influence over these conditions and the course of the diseases; for while he did no actual baking, his hours were severe, the work hard, and exposure a necessity. He arose at 3 or 4 A. M., and was obliged to go out in all kinds of weather in an open wagon. The delivering of goods rendered the use of a blanket impracticable. He had never used either alcohol or tobacco immoderately, and I feel confident of the absence of syphilitic or gonorrhœal history.

In 1907 the active symptoms appeared, but for two years they gave the patient no great concern. The first to attract his attention was an unaccustomed sense of fatigue, chiefly in his legs and trunk. He also experienced some difficulty in walking, which was especially noticeable on rising in the morning. This would last until 9 A. M.; that is, for five hours, by this time having been dissipated by his constant activity, and he would feel stronger. It was more difficult to walk on an uneven surface, or on an up or down grade; and because of the weakness, his gait was slower than usual, but after continued walking it became easier. He experienced difficulty in boarding a car.

At various intervals he would have stitches in the side of his chest and in the back. These pains would persist only for a few minutes. On remaining seated for any length of time the base of the spine would ache, but this never occurred as long as he was on his feet, no matter how fatigued he might be.

He was unable to extend the spine to the full extent, as, for instance, when lying in the barber's chair. He had to be shaved sitting up. This trouble involved the neck, which was stiff and sensitive to such an extent that walking and jarring caused discomfort. There was a slight pain in the hip on both sides.

In January, 1909, more active symptoms evidenced themselves, with pains in the small of the back and between the shoulder blades. These seemed to be little round spots, and he was unable to bend over because of them.

When seating himself he would be half way in the chair, and then would drop suddenly, because of the lack of control over the lower extremities, especially in the right knee and foot and the left knee. During the whole course of the disease the right side was affected to a greater degree than the left. There was a certain amount of stiffness in both lower extremities, and in addition some enlargement and tenderness of the right ankle during the daytime. The toes would puff up to such an extent that it was necessary to separate them with layers of cotton to prevent irritation.

On rising from a chair he would be obliged to stand for a considerable period before he could walk.

He now began to lose control of the right arm, and soon was unable to dress or undress. He had to be lowered on the bed, and also assisted into and out of a chair.

He did not sleep well at night, because of a dull, aching pain in the knees.

In the summer of 1910 the neck became stiff, and, in the words of the patient, "the cords in the neck grew hard." There was a numbness and intense pain in the back of the neck, running up to the vertex. This was uniformly worse in the morning, and could only be relieved by an hour's application of hot water. There was a swelling in the right shoulder. In order to ascend the stairs he had to pull himself up by his arms.

In December, 1910, he began to have a slight difficulty in urinating. The desire would come, and then there would be an inability to pass water until about two minutes had elapsed. After voiding a little, the flow would stop of itself without tenesmus. Then after another interval it would recommence. This symptom disappeared later.

Having obtained no relief from medical or other treatment, he started on a course of osteopathic manipulation, which lasted twice a week, from November, 1910, until February, 1911.

The treatment consisted of several different movements. Working the arms up and down and twisting the head from right to left, and forward and backward.

The operator would place a pillow on the spine and his knees against this and would pull the body forcibly backward by grasping the shoulders.

The patient would be put astride a narrow table, and the body twisted from side to side.

He would lie down on his back and the osteopath would make forcible abduction of the thighs.

Stretching the body was another movement, one person pulling the feet and another on the head, also rotating the head till it cracked.

The most violent of all, however, was a treatment in which the patient assumed a dorsal position with the thighs flexed on the abdomen and the legs on the thighs. The operator would then bear his whole weight on the bent legs and jump up and down on them.

After this heroic course the patient entered the hospital under the care of another physician with whom Dr. Browning saw the case in consultation. I am indebted to the latter for the use of the following details:

"I saw Mr. R. S. on February 11, 1911. He was in appearance about nine years older than the actual age.

"His pulse was 120, temperature 100.4° (rectal).

"Blood pressure (systolic), 115.

"Tongue, clean and steady. Teeth crossmarked and notched. Pupils equal and reactions normal. Double jaw jerk. All arm jerks. Numbness in both hands. On passive motion right shoulder joint is partly free, then spasmodically fixed and the arm can only be raised to the horizontal. Patient is able to get up slowly with the aid of a stick, almost to the erect posture.

"Right leg drawing up and twitching. Weakness and pain in the pelvis. Ankle clonus present—patient is able to produce it himself. Permanent clonus on right side. Strong cross knee jerk, produced

either way. Babinsky positive on the right. No epigastric or abdominal reflexes.

"Urinate twice a night, once or twice a day. Bladder and bowel evacuations not hurried.

"Accentuated second aortic sound. Mitral bruit."

In the spring of 1911 he lost entire control of the lower part of his body, and also the use of his hands, the right being more affected than the left. There was an intention tremor in the upper extremities, and the spastic rigidity of the lower extremities became more marked. Muscular atrophy developed. All this time there had been no real involvement of the sphincters.

I saw the patient for the first time in July of 1911. He had been under the treatment of a number of physicians, including an osteopath (as described), a Christian Science healer, a spiritualist and a clairvoyant. His appearance at this time was discouraging. He had been confined to the bed for a year, and had been taking morphine at night, for he was unable to obtain sleep without it. His face, though bright, was flabby; and there was a difficulty in swallowing, caused by a mass on the anterior aspect of the throat, which resembled a goitre, of very soft consistency. The breath was offensive, as of something rotten. The teeth ached and were loose. There was a certain amount of rigidity of the jaws, and the mouth could not be opened its full extent.

A hypersensitiveness existed over the whole body. The bed clothes irritated the skin, causing a creepy feeling, and care had to be taken to prevent this symptom from becoming unbearable.

Practically all the power of the upper extremities was lost, and incoördination existed to a marked degree. For instance, he could hold a sandwich in his hand, but after a moment or two, his fingers would break it by poking through the bread, and it would crumble all over him before he could eat it. His grip was very weak, and the arm movements had to be performed by a swinging of the shoulder, and if the upper extremity hung out of the bed for a few moments there were severe aching pains along the entire length. The intrinsic muscles of the hands were almost wholly wasted, and the fingers were drawn toward the ulnar side.

The atrophied lower extremities were in a condition of extreme contraction—the thighs flexed on the abdomen, the legs flexed on the thighs, and the toes involved to such an extent that the whole ten were dislocated. The knees appeared about twice the normal size, though they were not much enlarged, and they were extremely sensitive.

There were no bladder or rectal symptoms.

The diagnosis offered little difficulty. It was evidently a spinal condition, there was no doubt as to the spasticity, and the Hutchinson teeth suggested the proper medication. The use of morphine was forbidden. A course of potassium iodide was instituted and continued to the end, after which a tonic dose was given for some months. There are three ways of administering a drug, so that a *continuous* increase takes place. The first, one grain a day; the second, three grains a day; and the third, nine grains a day. I mention this because so often there is a misapprehension on the part of both the patient and the physician. The first way is written, "Increasing gr. i daily." The second is written, "Increasing the daily dose by gr. i." The third, "Increasing gr. i each dose." The latter was selected because

it is the most rapid. The patient had taken the iodides before, but on reaching a dose of fifty grains, the treatment was abandoned because, in the words of the physician, "the medicine disagreed with him." The difficulty was not in the drug, but in the method of administration. It had been prescribed in a syrup, and it was the latter that caused the gastric disturbance, and not the iodide.

When given in milk and vichy, the dose soon passed the point where before he had had to discontinue it, and then one hundred, two hundred, and three hundred; and finally reached four hundred and seventeen grains, as far as I have been able to determine, the largest dose on record. On that day, December 5, 1911, he took twelve hundred and forty-eight grains. At this point sneezing and coryza developed, and the dose was dropped to three hundred and seventy-five grains. As improvement occurred this was gradually diminished.

Copious draughts of water were drunk, as many as nineteen and one-half glasses of fluids in twenty-four hours on one occasion.

The first noticeable change was in the strength of the arms and the better coördination. For the improvement of these conditions I had suggested certain finger and arm exercises, one which gave him considerable perplexity being the untying of knots in a yard of tape.

About the middle of August the patient commenced to re-learn to write, and a little later the left hand was exercised in the same manner as the right. There was rapid improvement in the upper extremities, but the lower offered considerable difficulty to the operator and caused intense pain to the patient. Forced extension was obligatory, however, as the knees had become fixed in the flexed position. As the sensitiveness wore off, greater strength was used, and finally as the joint became more limber, active movements were instituted.

Galvanic electricity and massage were given. Other treatment was entirely symptomatic.

Some details of the gradual improvement under the respective dates are as follows:

November 11, 1911.—Patient sat up in bed without his back supported.

November 19, 1911.—Something that appealed to him—for the first time in two years he was able to get his shirt on over his head.

November 23, 1911.—Raised himself up in bed.

December 9, 1911.—Sat up in a chair.

December 24, 1911.—Was able to co-ordinate sufficiently to play the piano.

February 25, 1912.—During the forced extension of the leg, which was performed by bearing the weight of my body on the patient's flexed knee, some strands of the lateral ligament, on the right side, gave way with a loud snap. Treatment was continued the next day.

March 28, 1912.—Patient was able to go downstairs by hitching himself from step to step (he was not walking at this time).

March 31, 1912.—Could bend over sufficiently to put on his shoes and stockings himself.

May 10, 1912.—Walked a few steps for the first time.

May 21, 1912.—With assistance was able to get into a carriage and go for a drive.

May 30, 1912.—Drove a horse himself all afternoon.

From this time on the improvement was much more gradual because of the great difficulty in straightening the legs. The method used

previously had to be abandoned, and instead, the forced extension was produced by strapping down the thigh with the leg hanging free; then the latter was used as a lever, like a pump handle. In addition to this, once or twice a day the lower extremity was strapped on a board in as nearly straight a position as possible, for as long a time as the patient was able to endure it.

A tonic dose of potassium iodide (gr. v) was ordered to be continued for about one year; and until the legs became normally limber, an occasional fixation by means of the board with pads under the heel in a hyperextended position for an hour or so daily.

Patient was discharged, cured, January 1, 1913.

THE
OCTOBER MEETING
OF THE
ASSOCIATED PHYSICIANS
Of Long Island

WILL BE HELD ON

SATURDAY, OCTOBER 31, 1914

Details of the Meeting will be announced later



EDITORIAL



TWILIGHT SLEEP.

HOWEVER successful the German campaign may prove in Europe, there can be no doubt of the impression on the American public of the assault delivered from Freiburg against the labor problem. Dämmerschlaf first attacked the American public in an enthusiastic magazine article that might almost have had *Adv.* written after it. This was speedily followed by other articles in several magazines, all of which described somewhat minutely the method of painless labor elaborated by Krönig and Gauss; and then the newspapers took up the tale and one after another medical pilgrims returning from Germany have been interviewed who have enlivened the tale of their thrilling escape from war-smitten Europe with impressions of the twilight sleep. Then, too, there have been enthusiastic enconiums from the husbands of American women who have journeyed to Freiburg to escape the curse of Eve. These testimonials have varied from guarded expressions of general approval to wholehearted enthusiasm with now and then a modest bid for patronage peeping from behind the remark that a moderate supply of the precious drugs has been brought back by the physician interviewed.

Several vistas are opened up by this really remarkable public reception of labor artificially controlled. To quote a remark of one thoroughly equipped, scientific, conservative observer, "The psychology of the matter is most interesting." It would seem that in grasping the fact that labor may occur without the knowledge of the patient, the lay public has forgotten, if it ever knew, the real perils of childbirth. They seem satisfied that a combination of morphine with scopolamine *haltbar* (which we take to be merely a reliable and stable preparation of the drug), has enabled women to bear children painlessly, without risk, and to resume their daily affairs on the second or third day; in other words, they have generalized a situation from a few examples. This only emphasizes what skilled obstetricians have long recognized. The general public regard childbirth as a natural event, painful it is true, but of so little moment that it may be entrusted safely to anyone from a midwife up, and because of this, obstetrics remains the most arduous and poorest paid branch of medical practice.

The artificial control of labor is nothing new. In civilized lands partial chloroform anesthesia has been generally practiced since Sir James Y. Simpson introduced it in Edinburgh in 1847, and the use of infusion of poppy and of mandragora is mentioned in the earliest works on medicine. Chloral and morphine have at one time or another been widely advocated. It has remained

for the Freiburg surgeons, with the true German scientific spirit, to formulate a method, that, following a not uncommon practice in Europe where the individual does not receive the consideration that she does in America, they have generalized, and applied as a routine in the frauenklinik to which they are attached. It seems to have escaped the general notice that the release from bed on the second or third day so frequently commented on is not consequent to the morphine-scopolamine method but is a custom frequently followed in German obstetric hospitals where *dämmer-schlaf* is not used.

The Freiburg method is thought also to demand a preliminary amount of rest and seclusion as essential to its proper performance. It may be, as Crile declares, that such preliminary treatment diminishes the surgical shock, but it is much more likely that its main value is to be found in relieving the woman from the incubus of those horrible tales poured into her ears by sympathizing friends and relatives. Confidence and serenity on the part of attendants is a powerful psychological tonic. Some visitors to Freiburg have questioned the need for this seclusion and seem to feel that the method may be carried out fully as well in any home of the better type by any physician reasonably skilled in the administration of powerful narcotics.

Here and there one hears doubt expressed whether scopolamine is not too dangerous a drug for general use. As a matter of fact, data of its effect upon both mother and child seem lacking. There is a well-founded belief among American physicians that hyoscine, which is identical with it, is a dangerous drug and the indiscriminate application of morphine-scopolamine anesthesia will probably in time show itself to be not without danger.

It seems to be agreed by those who have had the opportunity to observe the method that it is of undoubted value in some selected cases, but that its employment as a routine is to be deprecated. Where a normal labor can be conducted without it, so much the better. It seems desirable in that class of cases where the prolonged nagging pains of a protracted first stage wear out a woman's strength and patience. All seem to agree that the general public should learn as soon as may be that the method does not do away with obstetric complications and is not the reason for the brief puerperium that seems to be credited to it.

H. G. W.

THE BOYLAN LAW AND THE DOCTOR.

IT is not necessary to reiterate the provisions of Chapter 363 of the Laws of New York, popularly known as the Boylan Law, and relating to the use of narcotic drugs; the State Department of Health supplies each applicant for the order blanks prescribed by the law with a full copy from which its text may be studied at leisure. But one hears now and again bitter denunciation of this act from physicians who seem to feel that the law was aimed at the profession directly and constitutes one step in a campaign of aggression on the part of the health department. While the JOURNAL holds no brief for the State Department of Health, it

believes that this attitude is erroneous and that it betokens a failure on the part of some physicians to realize the position into which the medical profession has been forced, partly because of its own folly and short-sightedness, partly because of the cupidity of well-organized bands of quasi professional adventurers, and partly as the result of that movement of public unrest which has heaved to the surface so many new prophets—untried doctrinaires, each with his panacea for every ill, political, financial and moral. This spirit is as much the natural outgrowth of changing social conditions as was the upheaval in France in 1783. One need not attempt an essay upon this subject except to recognize it as the potent factor in the life of this country today and to ascribe to it the desire for better things that, wisely directed, will in time bring about permanent good. Just now inexperience, lack of direction and impatience characterize its leaders, and as a result the Boylan Law with many other half-digested, incomplete and incongruous pieces of legislation have hatched out ducklings rather than fighting cocks.

It is safe to assume that the revelations of the extent to which the abuse of narcotics has penetrated came to the bulk of the medical profession with as startling unexpectedness as it did to the general public. Every physician has knowledge of a few isolated cases of drug habit, but it is probable that the combined knowledge of all reputable practitioners would fall far short of the actual extent to which drugs, particularly cocaine, are used as intoxicants; for it is extremely doubtful whether the bulk of drug users among the lower strata of society come under medical observation to any extent until the accident of an arrest or physical collapse reveals their condition. The police department of the larger cities and the agents of the Internal Revenue Department have been aware of this condition much longer than the medical profession. It is quite natural that the public, amazed by the extent of the traffic in drugs and horrified to find the inroads that it has made among school children, should have leaped to the conclusion that the medical profession, whom it supposed controlled the distribution of narcotics through their prescriptions, had failed to properly safeguard their supposed privilege. It has been so common for victims of morphine to claim that they first acquired their taste for the drug from their physician, that it was an easy and a natural step to postulate that all drug users had started in the same way. It is also a regrettable fact that among those convicted of wholesale traffic in narcotics were a few physicians. Given the fact of widespread drug abuse, plus a desire to control it at once, and the reason for the Boylan Law is evident.

How much are physicians to blame for present conditions? This is a question of great delicacy. It may confidently be stated that the physicians who have willfully abused their control of habit forming drugs are few indeed, but the loosely knit organization, careless business ways and proneness to concentrate on the strictly professional side, common to most physicians, must be held accountable for a degree of laxness which has resulted in leaving the retail druggist too much responsibility, especially in refilling prescriptions by telephone and dispensing on their own initiative; because of this laxness it has grown progressively easier for anyone to obtain almost any drugs in almost any quan-

tity. If, as a class, we have been careless and if through that carelessness we have relaxed from our duty in keeping up the barriers against the indiscriminate use of powerful medicines, what right have we to complain if the public, aroused to a sudden realization of the awful extent to which the drug-forming habit has grown, erects defenses for itself which in a measure curtail our convenience? As a matter of fact the restrictions of the Boylan Law are not oppressive; any physician may obtain the supply of drugs that he needs, may still prescribe according to his judgment and if he systematizes his work a little the effort of recording his prescriptions need not be burdensome.

The weakness of the bill lies in the exceptions made in favor of proprietaries. This is distinctly vicious, for it bestows on a non-professional class the privilege of compounding and distributing narcotic compounds with no restriction beyond the use of the needful blanks in obtaining their supply. The gross content is supposed to be stated on the label and the goods are presumed to be sold "in good faith." The motive behind this vicious paragraph will bear close scrutiny.

It does not require any deeper analysis of the question to perceive that it is not the action of the Department of Health, but the demand of an irritated public that lies back of the present law. The commercial clauses bear the hall mark of the drug jobbers' lobby. The lesson is obvious; it behooves us as physicians to study ourselves carefully that we may be, as we should be hereafter, pioneers in the effort to better the public health. To this end a better organization in state, county and local medical societies is essential. Let each physician regard it as his duty to give a certain amount of his time to the study of his relation to the body politic. Let him inform himself on questions of public health and if unable himself to give time and energy to the legislative side of the question, at least let him heartily co-operate in holding up the hands of those who may be better able to act as leaders in unifying the profession throughout the country into an effective weapon for the public good.

H. G. W.





Obituaries



DEPARTMENT UNDER THE CHARGE OF WILLIAM SCHROEDER, M.D.

FRANCIS SUDLOW KENNEDY, M.D.

DR. KENNEDY, an active member of our profession in this city for a number of years, died in the Brooklyn Hospital on March 17, 1914. He was born in New York City, October 21, 1856.

He received his medical education in the University of New York, where he was graduated in 1891.

He was a member of the Medical Society, County of Kings, from 1895 to 1905, the Brooklyn Medical Society from 1895 to 1901, and the Associated Physicians of Long Island from 1900 to 1902.

His papers are "Dispensary Experiences," "Music as a Therapeutic Agent," "Professional Chalk."

He leaves a widow, Annie L. Humbert, and one daughter, Frances Humbert Kennedy.

W. S., Sr.

WILLIAM B. MOSELEY, M.D.

DR. MOSELEY was a native of Dallas, Texas, and died at Flatbush, June 26, 1914. He was educated at Annapolis, Maryland, and his medical education was obtained at the University of Virginia, where he received his degree of M.D. in 1890.

He was for a number of years in charge of the psychopathic ward at the Kings County Hospital.

A member of the Medical Society County of Kings from 1904; Brooklyn Society for Neurology; American Medico-Psychological Association; Army and Navy and Crescent Athletic Clubs, and the Brooklyn Lodge of Elks.

W. S., Sr.

JAMES AUGUSTUS BLAKE, A.M., M.D.

DR. BLAKE was born in Lansingburg, N. Y., December 29, 1842, and died in Brooklyn, N. Y., June 9, 1914. He was educated at the University of Wisconsin, where he received his A.B. degree in 1866. His medical education was first at the Albany Medical College where he received the degree of M.D. in 1868 and the College of Physicians and Surgeons of New York in 1869. This was followed by an internship for two years in the City Hospital on Blackwell's Island. For a number of years he was in practice in New Jersey and in 1882 came to this city.

During his professional life he was physician to the Manhattan Eye and Ear Hospital, a member of the Medical Society County of Kings from 1882, Brooklyn Pathological Society, New York Physicians Mutual Aid Association, Invincible and Union League Clubs.

He is survived by a son, Dr. James E. Blake, and a daughter, Miss Alice H. Blake.

W. S., Sr.

SIDNEY HERBERT GARDNER, M.D.

DR. GARDNER was born in Kingston, Ontario, May 6, 1862, and died in Brooklyn, N. Y., June 11, 1914.

He was educated at Queens University, Canada, where he received his medical degree in 1889. Soon after he began the practice of medicine in this city. During his professional life he was physician to the Bushwick and E. D. Hospitals, a member of the Medical Society County of Kings from 1891, Associated Physicians of Long Island, 1901, Brooklyn Medical Society, 1902, and the American Medical Association.

A member of Acanthus Lodge, No. 719, F. A. M., of which he was master in 1913, and Aurora Grata Consistory A. A. S. R.

Dr. Gardner invented the Aluminum Splint used by the United States Government at Santiago in 1898.

Dr. Gardner leaves a widow, Elizabeth Gardner, and three daughters, Marjorie, Ruth and Elizabeth.

W. S., SR.

CHARLES GARTNER, M.D.

DR. GARTNER was born at Hoosick Falls, N. Y., May 1, 1870, and died in Brooklyn, N. Y., July 25, 1914.

He received the degree of Ph.G. from the Albany College of Pharmacy and that of M.D. from the Albany Medical College in 1895. He was in practice in the Bushwick section of our city. A member of the Medical Society County of Kings from 1896 to 1912, Brooklyn Medical Society, and Surgeon to the Brooklyn Hospital.

Also a member of Phi Sigma Kappa fraternity, Merchants' Lodge, F. A. M., De Witt Clinton Chapter, R. A. M., De Witt Clinton Commandery, K. T., and Kismet Temple, A. A. O. N. M. S.

His widow, Katherine E. Gartner, survives him. W. S., SR.





Society Transactions



TRANSACTIONS OF THE BROOKLYN GYNECOLOGICAL SOCIETY.

Regular Meeting held April 3, 1914.

The President, DR. FREDERICK C. HOLDEN, in the Chair.

Reports of Specimens.

DR. S. J. McNAMARA presented a uterus.

This specimen was removed after two previous attempts had been made to keep it in the vagina. This woman was operated on some five months ago at another hospital, and again about one month prior to the present operation in my colleague's service at the Kings County Hospital. The cervix and perineum were first repaired and then an interposition operation was attempted, but the uterus refused to stay where it was placed, and the cervix had begun to push its way through the introitus. It was then removed and the perineum again repaired. She is now free from displacement and the vaginal walls are in excellent apposition. I show this uterus chiefly because it illustrates a condition where the uterus should not be utilized in an interposition operation. The cervix is, or was when it was a fresh specimen, larger than the fundus and naturally could hardly be kept in the position in the pelvis that it should occupy by any ligaments at our command.

Hydrosalpinx Removed Under Stovaine.

I also wish to present a specimen of hydrosalpinx removed abdominally by intermedullary stovaine anæsthesia. The abdominal incision was made and the salpingectomy was accomplished painlessly and easily, but on account of violent straining by the patient it was necessary to administer a general anæsthetic to complete the operation.

Hairpin in the Uterus.

I have also an X-ray plate showing a hairpin in the uterus. I am sorry we have not got a box in which to place the plate to obtain a better view, but by holding it up to the light one can see the outline of the pelvis and the position of the uterus with its contents. This was taken out by the house surgeon, Dr. Mann. One portion was held in at the lip but the pin was easily extracted. This woman was twenty-two years of age, yet she had had six previous laparotomies as well as three curettages, having been a patient in many of the hospitals in the larger city. Seventh laparotomy today. During the operation at this time there was no scar on the cæcum and no appendix. There were some adhesions at the abdominal wound site. The abdomen showed the previous scars, except one, that had been excised at one of the subsequent operations.

Vaginal Hysterectomy Under Stovaine.

I wish also to report two cases of vaginal hysterectomy for uterine and vaginal prolapse by intermedullary injection of stovaine. These cases were of the extreme type of the disease associated with ulceration of the cervix and thickened, leathery changes that take place in the vaginal mucous membrane from exposure to atmospheric conditions as well as friction. While they stated their ages to be fifty and fifty-five years, respectively, they appeared at least ten years older. One was operated on eighteen years ago at Dr. Skene's clinic for cervical and perineal repair. They seemed in fairly good physical condition, except that their prolapse made them useless. A pre-operative hypodermic injection of morphine and hyoscine, one hour before the stovaine injection, was given in both cases. Three-quarters of one vial of

Babcock stovaine, six centigrams, produced almost immediate analgesia. At no time during the operation, lasting forty-five minutes, did either of them complain of pain. One was a little restless from a pain in the back. It was thought best not to prolong the operation, so the uterus was removed and plastic work done at a subsequent sitting. There was scarcely any notable change in the character or rate of the pulse or respiration. Their recovery has been much smoother than had they taken ether, and from convenience to operator to the safety of the patient there was nothing to be desired.

DR. JUDD:—Some two or three years ago in this Society I condemned the interposition operation. At that time I did not know how to select cases and had recurrences in all of my cases up to that time. I have had in the last three years fourteen operations by this method and the records in my books show that of these there has been one recurrence. That was simply the fault of my technique. As Dr. McNamara has stated, the case has to be carefully selected, and the proper technique must be followed. Regarding stovaine in the spinal column, I have used it considerably in cases of ectopic and other conditions but the vomiting has bothered me considerably, and during convalescence the patients have suffered from extreme, thumping headache. I have often wondered if the cause is that the patients are allowed to lie too flat on the table too soon after the administration of the stovaine.

DR. HYDE:—I have been very much interested in the cases cited by Dr. McNamara and I agree with him that cases must be selected. I had a case the other day where there was a large cervix and seemingly a large body of the uterus. I amputated the cervix and tried to strip up the bladder from the anterior wall of the uterus. If any one had told me that it was not possible to obtain a line of cleavage in such a case I should have doubted it, the body seemed so large. I went above and opened the abdomen. I pulled up the uterus and found the musculature of the fundus not bigger than my finger. The peritoneum on its surface was extremely thick, making a seemingly large body. I took the fundus and sutured it extraperitoneally, attaching it to the fascia, leaving the fundus directly under the skin, where it can now be felt. It seems a feasible operation in cases with large cervixes and small bodies.

Ruptured Uterus.

DR. JUDD:—I have a specimen of a uterus which I wish to show.

In November, 1912, this patient was delivered of a full term child by an abdominal section at the Kings County Hospital. On the 7th of March of the present year, finding she was pregnant and having labor pains she was admitted into the service again, and as near as we could make out at the time from the history and findings she was about eight months pregnant. It was a border line case and premature and she was allowed to deliver herself, which she did the following morning, of a premature baby weighing two pounds. The placenta did not come away and we thought it best to wait. The next afternoon, thirty hours after the delivery of the child, the placenta had not come away and Dr. Pfeiffer told me of the case. I asked him to deliver it with his hand. During this time the patient's abdomen had become distended and tympanitic, the pulse was poor. After the removal of the placenta, Dr. Pfeiffer notified me that he had found intestines in the uterus. I got out to the hospital as soon as I could, and at 5 P. M. removed the uterus by a supravaginal hysterectomy. The patient died the following day at 2 P. M., forty-eight hours after the delivery of the baby. At the time of the operation for cesarian I used plain catgut. Perhaps that is an argument against its use. I found on removal of the uterus that the omentum had become adherent around the previous scar. You could run your finger along the margin and it felt like an old ventral hernia. It was a bad result, but I should be glad of criticism.

DR. HUMPHSTONE:—I have been very much interested in the unfortunate experience of Dr. Judd in this case. I have not personally seen in my own cesarian cases a rupture of the uterus at a later labor, but it may come to me. I think that the apposition of the cesarian wound is an important matter; the surfaces should be perfectly approximated. I use a straight needle and put it in down to the endometrium and bring it out at the other side the same way, from the lower to the upper edge. After we have tied them over we put in an intermediate suture with the same needle. I have put my hand into two uteri after spontaneous delivery and the scar of the cesarian felt like a

thin line, very thin, in one case. In the other case, which was operated on for placenta previa, there was a very short scar as I examined it in the third stage in a contracted uterus. The accurate apposition of these uterine wounds and using a straight needle with number two chromic gut is the best method.

DR. HUSSEY:—I am sorry not to have heard all of the report of the case. I condole with Dr. Judd on his unfortunate experience, but I do not think he need feel specially bad, as it happens to others. I have had some experience with rupture of the uterus after cesarian. I have seen three cases, although they were not all my own. The last was within a month. This woman was operated on twice, and she was within two weeks of term. She was taken suddenly in the night. She came into the hospital with a pulse of 140, suffering from shock, and we made a diagnosis of rupture of the uterus. I could feel the fetus floating in the abdomen. She was operated on within thirty-five or forty minutes after admission. She was pulseless when on the table, with the fetus, placenta, and liquor amnii in the abdomen. The rupture had been through the fundus and the uterus was ruptured from tube to tube. The uterus had contracted down to the size of a large grape fruit, as hard as a rock; the thickness of the uterine wall was from two and one-half to three inches. An intravenous was started at the time, and I took out the uterus. The patient made an uneventful recovery. The other two cases were practically the same. In all three cases the placenta had been attached under the scar. In my own cases which were operated on quickly while the fetus was in the uterus the placental attachment could be seen, and where it had ruptured there was nothing but the peritoneal coat supporting the placenta, that being all there was left. I should like to ask Dr. Pfeiffer if the placenta occupied the site of the old scar, and if this is the cause of breaking out of the scar and the cause of the rupture. I have had a couple of cases delivered without trouble; one a young woman I operated on for eclampsia, has had three living babies.

DR. COMMISKEY:—Some years ago a patient came into the hospital in the early stage of labor; she had had one previous cesarian section and this was her first subsequent pregnancy. On being placed upon the table for examination the patient seemingly fainted, but upon examination she was diagnosed to be suffering from internal hemorrhage. The membranes were unruptured, the cervix two fingers dilated, head unengaged, fetal movements and heart sounds absent, patient evidently at term; no external bleeding. The diagnosis rested between ruptured uterus and premature separation of a normally situated placenta; the latter diagnosis was preferred because of the unruptured membranes, the short period of labor, and the presence of the fetus in the uterus.

The dead infant was delivered by internal podalic version with perforation and crushing of the aftercoming head; immediately upon the birth of the child the patient's condition became decidedly worse; the placenta was left in the uterus, the latter packed and treatment to combat the shock was instituted. The patient died two and one-half hours later.

Post-mortem showed the scar of a transverse fundal incision for the former cesarean section, with about one-fifth of the placenta protruding through a rupture of the uterus at the site of the old cicatrix; the abdomen was filled with blood. Seemingly the chorionic villi and placenta had burrowed through the scar tissue in the uterine wall and all that remained to complete a rupture was the peritoneal covering of the uterus, which easily gave way during the first few labor pains.

Dr. Humpstone has brought up an important point; the proper approximation of the uterine walls after cesarean section, and with this end in view I have been recently using two gastro-enterostomy clamps to approximate the edges of the uterus after the delivery of the fetus and its appendages. The advantages are controlling the bleeding from the uterine wall during suturing and at the same time steadying the uterus during the process, thus avoiding sponging and other manipulations to keep a clear field.

DR. JUDD:—I expected more criticism for not making the right diagnosis. Dr. Pfeiffer states that the rupture was at the site of the scar. I should like to know whether the character of catgut used, whether plain or chromic, would make a difference. I used the straight needle and practically the same method of closure. I am very glad to hear of the method suggested by Dr. Commiskey; it appeals to me as being very good.

DR. HOLDEN:—It would seem, if we are going to have ruptures after cesarian section, that we might be justified in sterilizing the woman upon whom we do the operation.

DR. HUMPHSTONE:—I can report a case I know of, a case where an operation was done for intestinal obstruction. This patient became pregnant again in the care of Dr. Stone, who delivered her at her home. The surroundings were not good, the light bad and there were other inconveniences. She had a hemorrhage right after delivery, and shock, the flow keeping up like the oozing from a cervical tear. It was found that the cesarian scar was open. She died from the hemorrhage.

DR. PFEIFFER:—I hardly think it fair that Dr. Judd should take the responsibility of this case on himself. If anyone should have made the diagnosis it was I. This patient came with the history of possible premature rupture of the membranes. She was put to bed and before I reached the hospital she had delivered herself without any especial pain. The only thing that might have led us to suspect that there was something wrong was the small amount of blood lost after the child was born. The placenta did not come away and the case was finally selected as one in which we might wait. The decision was made by myself and not by Dr. Judd. I never did think much of allowing a placenta to remain indefinitely, and I think less of it now than ever. If I had gone after it the diagnosis might have been made and a different result have been obtained.

DR. HUMPHSTONE asked if there was much contraction of the cervix and if there was much difficulty in getting the placenta.

DR. PFEIFFER:—It was reached with much difficulty.

Calcareous Fibroid.

DR. BALDWIN:—The first specimen is that of a calcareous fibroid. This patient was nearly sixty-eight years of age and had known of the presence of the tumor for forty years, and in that time had been under the care of Dr. Byrne, Dr. Skene and several men in Boston. I wish to emphasize the dangers of fibroids; sooner or later they cause symptoms and as soon as these symptoms appear, particularly pain and hemorrhage, they should be removed. This specimen is as hard as stone.

The second specimen is one of epithelioma of the cervix after hysterectomy for fibroma. The patient is fifty-five years of age. The condition had been bleeding for several years and had been treated for ulceration of the cervix. She was operated on four years ago by supravaginal hysterectomy and the cervix left. Dr. Murray reports the case as one of typical epithelioma. It is the only case I have ever had of this character.

DR. CHASE:—There is one question I should like to ask regarding hysterectomy, whether or not it should include the entire removal of the uterus? In this particular case malignancy supervenes in the remaining cervix. The chances are that malignancy of the body without involvement of the cervix would be very small.

DR. DICKINSON:—The chances of such a complication are just one in fifty for carcinoma of the cervix. If a man examines carefully he will remove the cervix if it shows evidences of disease or laceration. The practice of most of us is to leave nothing but a stump with a dimple.

Two Cases of Spontaneous Rupture of the Spleen.

By Gordon Gibson, M.D.

Mrs. R. M., age 34, was admitted to the hospital on March 24, 1904. She was born in Italy, had been married nineteen years, had six children, the last two years previously, and two miscarriages, the last five years before admission. While scrubbing the floor on her knees the morning before admission she was seized with sudden acute agonizing pain all over the abdomen. This pain continued until she was admitted. Her condition at that time was that of profound shock and although her menstrual history was perfectly normal a diagnosis of ruptured ectopic was made.

A median incision was made and the abdomen found to be full of blood. Both tubes and ovaries were normal; appendix was normal. One stone was found in the gall bladder and the liver was somewhat enlarged. The spleen was found to be three times its normal size and ruptured. The median incision

was closed and another incision made over the spleen which was freed from some slight adhesions and removed. An iodoform gauze drain was inserted and the wound closed. The patient left the table in only fair condition and died two days later. The spleen was found to be split nearly in half from before backwards and the pathological report from Dr. Murray was splenomyelogenous leukemia. The blood count showed 196,000 white cells, with 96 per cent polys.

The second patient, Mrs. V. L., was admitted March 20, 1914. She was twenty-six, had been married six years, had two children, aged five and three, with no miscarriages; menstrual history normal. She was said to have had chronic malaria, whatever that may be.

On March 17th, while pulling up the dumb waiter with a scuttle of coal was seized with a sudden pain in the abdomen. This continued, but she was able to do her work in the usual way until Thursday when she sent for her doctor. He thought she had appendicitis and sent her to the hospital the next day, Friday. She was admitted with a rectal temperature of 102 degrees and a pulse of 120. There was a good deal of abdominal pain, some tenderness over the appendix, no rigidity, no shock nor symptoms of hemorrhage. The condition was thought to be appendicitis and a right side incision was made. The abdomen was found to be full of blood and clots which pointed to a ruptured ectopic. However, the adnexa on both sides were normal. Quick abdominal exploration found a normal-sized ruptured spleen. The incision on the right side was closed and another made over the spleen which was removed. This spleen was not enlarged and did not appear abnormal. It was torn almost completely through. This was sent to Dr. Murray, but through some mistake was not examined microscopically. He says that microscopically it was a normal spleen.

Two Cases of Chronic Hyperplastic Tuberculosis of the Intestine.

By Dr. Gibson.

O. F., aged 28, colored, single, was admitted to St. Peter's in July, 1909, with a history of pain for one year in the region of the cecum. There had been constant dull ache with paroxysms of acute sharp pain lasting from three to five days, with slight elevation of temperature, necessitating rest in bed. During these attacks there was constipation followed by diarrhea. There was anorexia and a gradual loss of flesh with some anemia. On admission there was marked resistance of the right rectus muscle and tenderness over McBurney's point. Nothing else was found on examination and a diagnosis of chronic appendicitis was made. Through a right-sided incision an irregular nodular mass was found filling the walls of the cecum and the lower half of the ascending colon. The last two inches of the ilium was involved and there were several enlarged glands in the meso-cecum. There were no adhesions, the entire mass being perfectly free. The peritoneum was not involved at any point and there was no evidences of tuberculosis. The condition was thought to be malignant and resection of four inches of the ilium and ten of the ascending colon with removal of the meso-colon containing the enlarged glands was done. Because of the dilatation of the ilium an end to end anastomosis by the Maunsell method was made. She made a perfect recovery and is today well and weighing more than she ever did. The pathological report was tuberculosis. There was no ulceration of the mucosa.

The second case is another negro, A. E., aged 22, who was admitted May 4, 1912, with a history of abdominal pain for two years. This pain was always below the umbilicus and there had been five attacks of severe sharp pain lasting from three to six days, with some elevation of temperature and constipation. On examination there was marked resistance over the entire lower abdomen with general tenderness and no mass. There were no other findings. A Von Pirquet was positive, but no foci of tuberculosis could be found. An exploratory laparotomy was suggested and accepted.

At operation the cecum, sigmoid and many coils of small intestine were bound by adhesions into one moveable mass. The wall of the sigmoid was thickened and nodular, the infiltration extending from the upper part of the rectum half way up the descending colon. The peritoneum was red and injected, but showed no tubercles. The appendix was on top of the mass, only slightly adherent and was removed. Nothing further was done. The patient made a good recovery and left the hospital on the 28th day. At the suggestion of Dr. F. C. Paffard we prescribed the lactic acid bacilli. In spite of the bad

prognosis the patient has improved greatly, has gained weight and is free from pain. The condition was undoubtedly one of chronic hyperplastic tuberculosis.

Murphy in his clinics cites a case of intestinal tuberculosis where he closed the abdomen without resection and says that resection should not be done unless one can get well beyond the involved area into a zone entirely free from adhesions. He believes that tuberculin gives the best results if properly administered. He states that the condition is more common among the negroes and compares it to the hypertrophic form of lupus.

Whether this condition was primary in the intestines of these two cases is a question. In 419 autopsies of tuberculous subjects, Wagner found twenty instances in which he considered the intestinal lesion to be primary. In 1901, Koch had seen only two cases of primary infection, but later he collected twenty-eight. Weigert is given as the authority for the statement that in 90 per cent of cases of tuberculosis of the lung, infection follows in the intestine. This form of tuberculosis was first described by Durante in 1890, and by Billroth in 1891, and since then by many others.

Discussion of the cases operated upon during the day by Dr. Baldwin as part of the report of St. Peter's Hospital.

DR. V. L. ZIMMERMANN:—I always like to see Dr. Baldwin at work, and I was interested to observe what good work he could do with so little help, and without trained men assistants. It shows that nurses can be taught to do very well in that kind of work. I might comment also upon the fact that he can accomplish so much through such a small incision and with so little retraction; I think that some form of self-retaining retractor might be of great assistance to him. I thought Dr. Baldwin rather ignored the presence of uncovered intestines in the wound. I would criticize the number of loose sponges about the field of operation. I have a constant fear of unattached sponges which amounts almost to an obsession. I think I noticed the method of keeping count of pads used in the cavity; each time a pad is introduced, the anesthetist nurse puts a safety-pin in the front of her gown. This is ingenious, but will divide her attention too much between operation and anesthesia. This nurse gives a good anesthesia—better than the ordinary interne. Miss McDonald, from long association with the operator, knows his wants, and is an admirable first assistant.

DR. DICKINSON:—I have a bad habit of taking notes and I did so today. The only thing I was badly disappointed in was in his not getting a name for his own operation. He called it a Modified Emmet. I cannot see where one can get a grip on it by that name. Panhysterectomy describes a definite operation. A Wertheim is a Wertheim in which one digs away out to clear the obturator nerves, in fact out of the sides of the pelvis, but we know it in the nomenclature. I could call Dr. Baldwin's operation a flap operation, a vaginal application. If this should be sent out by the nomenclature society I should like to know it. Dr. Baldwin is the soul of frankness and tells everything about his work freely. The case we saw today had an awful band across the cervix, it was as thick as the finger. It was a retroverted uterus, high up, there was no cystocele and no straining could show the anterior vaginal wall. I think his is the only institution where the patients do not complain. The nurses are spick and span. It is a great thing to administer in a place like that. His asepsis is very good. I cannot get the same results, and his seldomness of pus. The first case today was a stem case which he placed with a double silkworm-gut suture transversely and held by a small pearl button. They do not cut or bury. Dr. Pomeroy uses a ten-cent piece; we are using lead pieces. The pearl button is a good thing. The nurses have pockets in their gowns for sponges and that seems to be a good thing. I also am distrustful about sponges, as Dr. Zimmermann suggests. We saw Crile using a long roll as a sponge. I have not had the misfortune to leave sponges in the abdomen, but I may. I should like Dr. Baldwin to speak of his results as to clean cases, he having had only two infections in abdominal wounds in twelve years. I should ask also why in private hospitals they get a better result than in general hospitals? The second case we saw today was a large ovarian cyst, multilocular, solidly adherent to the sigmoid, which the doctor tried to get to come to operation two years before; it contained a pail full of coffee-colored fluid; there was a great deal of matting in the pelvis. We had some discussion as to whether peritonealization is feasible in all cases. In my own practice we take the sigmoid and cover over by a row of surface sutures. It was good to see the way the stump was swung up, the broad and round ligaments down into the stump. Dr. Baldwin uses that method

as a very simple way of treating quickly the broad ligament. The suture ligature swings under the uterine and clamps the broad ligament, and then he cut away the uterus and left the stump of the cervix; it swings around the uterus anchoring, ties; that gets the uterine; the next suture in the round ligament, and that swings the broad down to the stump; the next suture swings in the back of the stump, and all are brought in, so that the initial tie and the final tie are on that side. Dr. Simpson had the courage to do that two years ago. I often do it in the Brooklyn Hospital, without any other sutures on the vessels, but the final closing in carefully of the wound. We were interested in the treatment of the appendix, in which he ligated and with a fine cautery tip destroyed the mucous membrane, but did not completely cover the stump. I was most keenly interested in seeing the remarkable anterior bridge formed by his operation for prolapse. I never understood before just what the last stage of the game was until I saw this bridge. The vagina did not have a perceptible narrowing; it held the bladder back. I have seen Dr. Baldwin operate before and I know how quiet and skilful he is without and effort. I think with some form of broad retractor—perhaps a self-retaining one—he would keep the abdominal wall out of the way, but if a man is used to it it is all right. It is not so good for the spectators. I am a great admirer of his operation and I know the results. I have not seen any post-operative hernias. I don't think a man's hernias always come back to him, but I do not think Dr. Baldwin's aftermaths come back. I believe we cure our cases generally. A man's results not coming back speak strongly of his success.

DR. McNAMARA:—Dr. Baldwin's work is no new thing to me as I served several years apprenticeship with him. His simplicity, his consistency, his persistency were all strongly impressed upon me. His treatment of the appendix was ideal. I was sorry not to see more efforts for the comfort of the operator, and sorry for the man who had to do such work without more assistants, and I believe he could lessen his labor by some form of retractor. It was certainly a splendid demonstration of efficiency.

DR. JUDD:—The one thing that struck me was the method of dilatation used by Dr. Baldwin before putting in the stem; not only did he use the Goodale dilator but he also used the old-fashioned instruments. I have of late only used them for the cervix for dysmenorrhoea following trachelopasty. I am going to get mine out and take them down to the hospital and use them. My criticism also relates to the sponges; it gave me a shock. I had a case four weeks ago in which we lost a sponge; we could not find it, and never did find it as the patient got a post-operative pneumonia and died. In Philadelphia the count is kept not only by the nurses but by the first assistant. I think the anæsthetist has enough to do to attend to that special duty without counting sponges. I believe Dr. Baldwin's results are due to the manner in which that institution is run. It would take a long time to train a house surgeon, at least two years, to get the same degree of efficiency as Miss McDonald.

DR. JEWETT:—Unfortunately I did not hear much of the previous discussion, but my criticism of the morning's work would be entirely favorable. One point that may not have been discussed was the simple and efficient method Dr. Baldwin used to hold the ends of his ligatures, before tying, in closing the skin wound. He has the silkworm gut boiled in a single loop so that it is more easily handled. The ends of each suture, after it is in place, are simply drawn upward in the line of the wound and held in place by the scissors or other instrument which is thrown across them, not clamping with individual clamps as has been my custom.

DR. BALDWIN:—I wish to thank the doctors for the tenderness with which they have dealt with me. I was sorry not to have been able to do the operation for prolapse. Four women promised to come, two for the morning and two for the afternoon, but the various excuses they gave were to them sufficient. One realized it was Friday, another was menstruating, the others did not want to be in the hospital for Easter, and so they all went back on me. If any of the doctors are interested I shall be only too glad to show them the operation and will let them know when they may come. In regard to the criticism by Dr. Zimmermann of the uncovered bowel, I have always prided myself on the few laparotomy sponges I use. I believe that the irritation of the rubber glove is less than that of a sponge, and so dispense with them as much as possible. The sponge lying in the abdomen is more

irritating than the rubber glove. The counting of sponges which everybody speaks of I make this defence. As far as I know I have never left anything in an abdomen. The assistant and I both keep sponges in pockets and it is an unwritten law that not a sponge is let go of. This criticism, however, will make me more careful in the future. The use of safety pins by the anæsthetist I do not know anything about, she must have done it on her own initiative. I do not endorse the use of the pins. When a nurse hands me a sponge a mental record is made by me, by the first assistant and by the anæsthetist. At the end of the operation the nurse that passed them must know the number. It is just as safe as by any other method. The nurse who is attending to the anæsthetic has enough to do without the additional care of counting sponges.

As to the name of the operation, vaginal application means simply the use of the vaginal mucous membrane, but I use more than the mucous membrane, I use the entire vaginal wall. Suppuration I am glad to say is a very unusual thing in the Skene Sanitarium. I do believe there is a difference between the private and public hospital and I get more infection in St. Peter's Hospital. I believe it is due to the few people and the continuous service of those helpers. We are simple in our ways of doing everything; there are no extra dressings, no extra anything. Everybody has a function to do, and they do it, and sometimes they do a number of other things. The button mentioned was suggested to me by Dr. Bonner in this Society. In the matter of the second case and the use of the sigmoid to cover over the stump, I am very chary about moving the sigmoid out of its place. I would rather take a chance of adhesion than move the sigmoid. Referring to the single suture it is fifteen years ago, at least, that I gave this idea in this Society. The Wight forceps are essential and they are superior to any others on the market. Speaking of closing the wound with stay sutures, I include the fascia. Everyone speaks of the small opening and of retractors. I am used to the small opening and that is the reason why we do not put in those great shovels. I do not know where another man could have helped me in my work this morning. Perhaps the retractors would have been better for the spectators. The dilators I find of great advantage. The sutures are quickly pulled over to the edge of the wound by the method I use.

DR. CHASE:—Dr. Gibson's paper is interesting and comprehensive. It lays open the whole question of the danger of delay in malignant disease and the fact that it has not been looked after in the proper way. Until the public has been better informed and cases have been placed under proper inquiry, as Dr. Gibson has stated, the mortality is not likely to diminish very much. Dr. Byrne's results in cervical cancer have been unsurpassed and his operation can be done now as well as in the past.

It is a question as to the use of radium in uterine cancer and its efficacy in deep-seated lesions. There is a growing belief among conservative observers that it has a larger field of usefulness, not wholly curative but palliative. Radiation following radical operation gives better results than when it is not applied by destroying unseen and unremovable areas of involvement. The efficacy of radium depends on its intelligent use, not too much, not too little will go far toward saving some cases.

DR. JUDD:—My experience with cancer of the uterus has been limited, but I have seen only two cases where I have operated that have been cured after a period of five years. I have all curettings of the endometrium examined for carcinoma and adenocarcinoma.

DR. GIBSON:—I am not prepared to say much about radium. When I was at the Woman's Hospital on the house staff it was my duty to use radium on inoperable cases, and we also used the X-ray. I never saw any good results from their use. All the cases I speak of in my paper were curetted and specimens sent to the pathologist. Every case is verified by pathological examination.

(For original paper, see page 374.)

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THE GLIOMATOUS TUMORS OF THE BRAIN.*

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WITHIN the past year there has come into my hands an unusual number of brain tumors. These tumors have embraced most of the varieties of glioma, also those tumors which arising outside of the brain extend into it by their growth, and several metastatic tumors in which the tumor-forming tissue has been implanted in the brain. In association with these definite tumors the structure and relations of the tumor-like masses produced in syphilis and tuberculosis have been studied. The material has been in part obtained from surgical operations, in part from post mortem examinations, and in point of availability for study has left little to be desired. It has been provided chiefly from the clinic of Dr. Cushing at the Peter Bent Brigham Hospital. To Dr. Cushing, I am greatly indebted for the material, but more for the stimulus and the assistance which has come from his co-operation in the work.

When one is actively concerned in teaching, and in the innumerable forms of activity necessary in the conduction of the pathological work of a large general hospital, time is lacking for the concentration of attention on a single subject. There is, however, a certain advantage to be derived from the multiplicity of impressions which general hospital work entails; all disease whether considered from the clinical or pathological point of view has much in common and the study of each form of disease is helped by the study of all.

It will be possible for me to give you this evening some general considerations only, which have come from the study of the gliomata. It will not be possible for me to take up any consideration of the important and most interesting literature of the subject.

The inter-relations of the tissues of the central nervous system is so close and the structure as a whole so different from that of other structures of the body that a short resumé of the most important structural features is a necessary precedent to the consideration of any of the tumors arising within it. We may consider the central nervous system as a mass which holds a large amount of fluids in its substance. It contains first, the essential nervous tissue, the nerve cells with dendrites, the axones, and probably neurofibrils, and an enormous number of medulated nerve fibres. This nervous tissue constitutes the great bulk of the mass. All of these elements are embedded in the neuroglia, a tissue about which our knowledge is comparatively recent and to a greater or less degree uncertain. According to the

* An illustrated address presented before the Brooklyn Pathological Society, April 9, 1914.

most recent literature the neuroglia may be regarded as forming a reticulum, possibly better described as a syncytium with nuclei more or less regularly distributed and occurring chiefly at the nodal points. The nuclei differ greatly in numbers and in relation to the other elements in different parts of the brain, and are relatively more numerous in the child than in the adult. Around these nuclei it is difficult or impossible to distinguish any cytoplasm in the ordinary sense. The tissue also contains fibrils which are in close relation to the nuclei but do not pass into them. The fibrils are extremely small and have a chemical composition which enables them to be differentiated by certain methods of staining. Lying in the reticulum or syncytium they form a fine network everywhere. On all surfaces of the tissue, and particularly on the surface of the cord and ventricles, the meshwork is increased and condensed. The neuroglia nuclei appear also in other places, as in the apparent spaces around the nerve cells forming the satellite or trabant cells and may be found to some extent in the small perivascular spaces. In the normal tissue it is difficult to recognize such a structure as this. The structure is much more evident in tumors composed of neuroglia alone, in which the complications due to other tissues are not present.

The nervous tissue is comparatively feebly vascular. It has no metabolism; the blood supply, though wonderfully regulated, takes care of nutrition alone. The blood vessels universally are surrounded by spaces which are crossed by the neuroglia fibrils, these being also connected with the pia. What intercommunications allowing fluid transmission there are within the tissue is uncertain although salts in solution easily find their way from the perivascular spaces into the spaces around the ganglion cells.† Cells in the ordinary sense of the word, that is composed of a nucleus with a definite amount of differentiated material around this, cannot be distinguished in the normal neuroglia of man. Such a structure of the tissue, a connected mass of cells and fibres embedded in a tissue meshwork of nuclei, protoplasm and fibrils, holding in its substance and in close association a large amount of fluid, has given to it certain physical characteristics. The tissue does not seem to be easily penetrated by cells; the polynuclear cells in foci of suppuration do not so readily infiltrate as in other tissues. Red blood corpuscles from small hemorrhages fill and dilate the perivascular spaces but do not penetrate the tissue unless this has experienced some pathological alteration. The tissue possesses a great facility for fluid absorption; edema of various degree, both focal following injuries of whatever nature and general, due to circulatory disturbances, easily arises. The neuroglia has great power of proliferation, this depending upon the nature of the stimulus which excites it. In the repair of injury there is a co-ordinating activity between the neuroglia and connective tissue formation coming from the vessels and associated with their growth. Foci of destruction due to vascular obstruction are surrounded by a wall of neuroglia; the wall of an abscess, on the other hand, is formed by an inner lining of connective tissue and outside of this a mass composed of newly formed neuroglia. In the vicinity of tuberculous foci whether a meningeal tuberculosis or solitary tubercles in the brain substance, there is always an increase of neuroglia which

† I have been shown by Dr. Weed from Dr. Cushing's laboratory a number of beautiful slides obtained by precipitating within the brain a substance introduced in solution into the cerebro-spinal space, the precipitate around the ganglion cells following along the dendrites and nerve fibres, and in addition as fine granules in the neuroglia.

often extends far beyond the immediate lesion. The metastatic tumors of the brain produce but little reaction of the neuroglia in their immediate vicinity. In the neuroglia adjoining a large invading tumor, I have found no change whatever. Such circumscribed syphilitic foci as gummata produce much less proliferative change than do the tuberculous lesions.

Only a word further regarding the blood vessels. These differ from the vessels in other parts of the body by the thinness of their walls and by the absence of an adventitia; vessels of considerable size are formed by an endothelial tube outside of which there is a connective tissue membrane in which it is impossible to distinguish cells belonging to it. The endothelial cells proliferate easily, and seem to form a fibrillar intercellular substance. In the newly formed neuroglia the nuclei are more numerous and particularly in the cortex definite cells with cytoplasm of irregular and bizarre forms are found which have received various names, that of astrocyte being more generally used to distinguish them. The fibrils in this newly formed tissue are more abundant and are generally thicker than the normal. In such cases the neuroglia formation may completely replace the nervous elements. It is more marked in the cerebellar cortex than elsewhere.

After this somewhat lengthy preamble, to return to the gliomata. Considering these as a tumor class, they undoubtedly, though arising from a tissue of epiblastic origin, have more similarity with the connective tissue tumors than any others. Like the connective tissue tumors, they present wide differences in structure, in cell characters, in relation to surrounding tissues, in manner and rapidity of growth, in vascularity and in the accompanying degenerations. So great is the variation which they present, even in different parts of the same tumor, that it is difficult to give a classification which will serve even a convenient purpose. There are certain things which are common to the class. To me the most striking common characteristic is their manner of growth which is by infiltration and not expansion; the glioma replaces tissue in its growth substituting itself for it and not pushing it aside. In doing this the form of the tissue which is replaced may be perfectly preserved. The growth of the tumor is accompanied, or preceded by, a growth of the normal glia which is very diffuse, often is seen far beyond the limits of the tumor and which makes it impossible histologically to sharply delineate the tumor. There is no other condition which produces such an extensive gliosis as the growth of a glioma. This gliosis is not due to injury produced by the accompanying pressure, for in other conditions of pressure produced by intracranial growths, it does not take place. This diffuse infiltration of the tissue with the tumor is so marked in certain cases as to give rise to a classification of certain tumors as the diffuse gliomas, but it is a property common to all though not appearing to the same degree. Ganglion cells and myelinated fibrils may be found in the interior of what an ordinary stain will show as tumor tissue only.

Another characteristic of the glioma is the tendency to cyst formation. The cysts so formed differ from the cysts in other tumors which either result from the activity of epithelial secretion or represent the remains of areas of degeneration. In the glioma the cysts are not the result of cell secretion nor do they represent areas formerly the site of degeneration. They are due to the fluid absorption of the tissue and represent an accentuation of a condition common to the entire tumor. It is possible, however, that in certain of the gliomata there may be spaces lined with differentiated glia cells comparable to the

ependymal epithelium, but of the tumors into which such formation enter there were none in the twenty-five cases which have been studied.

The third peculiarity of the gliomas as a class is the limitation of the tumor to the tissue in which it has originated. Even when rapidly growing the growth is confined to the nervous tissue. It is remarkable to see the tumor growth involving the cortex over large areas and entirely supplanting this, but in no place extending into the adjoining meninges. It is true that the gliomata do in places, particularly in the sulci, extend into the meninges, but when this is the case the tumor at some point seemingly violently breaks through the tissue which confined it; a process, often small, extends into the meninges and from such a process the growth further extends. It is this apparent difficulty which the tumor has in growing outside of the nervous tissue which explains the absence of metastases. There seem to be no instances of metastases of the gliomas of the central nervous system. Some of the tumors may have the conditions favoring metastases consisting in abundance and loose relations of cells which have great capacity for growth. It is true that metastases by means of lymphatics cannot take place from the brain for there are no open lymphatic channels communicating with the general lymphatic circulation, but the way by the blood is open, the glia cells are in certain tumors amoeboid, they may penetrate the thin walls and in one case of a glioma of the cerebellum I have found the tumor as a thrombus growing inside a vessel.

Another characteristic feature of the glioma is the tendency of the tumor to extend along surfaces. One may see long lines of extension of the growth either on the surface of the brain or in a sulcus connected with the tumor at one point. In one case of the series in a child of thirteen, a glioma originating within the pons grew over this in a mass much resembling a mass of plaster poured over the surface and which had subsequently hardened. In another case not in the series a glioma of the cerebellar cortex extended over the surface of this and along the entire length of the cord. This tumor grew rapidly, caused excruciating pain from nerve pressure, and the unfortunate patient, a young married woman, gave birth to a healthy child a few days before death. Still another distinguishing feature of the gliomata has reference to the method of nuclear multiplication which is predominantly by the various methods of direct division instead of mitoses. Mitoses certainly occur in multiplying neuroglia cells which have become differentiated and separated from their immediate connection with the reticulum. They were first observed and described by the author in the cortical changes which accompany the meningitis produced by the meningococcus and may be found in great perfection in the cellular and rapidly growing gliomata. In typical syncytial glia, I have never found them. The direct division may take place by simple fission or budding or by a more complicated method. In the cellular gliomata large homogeneous cells with separated chromatin masses often arranged in a manner simulating stages of mitosis are not infrequently found. They result from a simple fragmentation of the nucleus without the stages preceding the formation of the chromosomes. The chromatin particles vary in size and all are connected with the threads of the spindle. One, two or several centrosomes, the latter often arranged in a circle, are found in these cells. From these chromatin masses nuclei develop which vary in size and retain for some time their connection with the threads of the spindle. In certain cases large giant cells result from such direct division, and in these there may be hundreds of centrosomes. The new nuclei which result from

the direct division separate and take their place in the syncytial mass or the multinucleated cells fragment and are lost, or true cells may result. Rarely two nuclei are found in the well-formed cells.

It is further difficult to avoid the conclusion that at least certain of the gliomata grow by a transformation of the surrounding tissue into the tumor structure. It is difficult to advance a view which is so at variance with the generally accepted views of tumor growth, but in certain cases no other view seems tenable. If the glia growth around a tumor be regarded as a reactive gliosis, there is no way of distinguishing this from the tumor. The tumor seems to form a center from which the stimulus to neuroglia growth proceeds.

Keeping in mind the comparison of the gliomata with the connective tissue tumors a large group of them conform to the type of these tumors represented by the edematous fibromata. Of the twenty-five tumors examined in this series fourteen belong to this class. These softer varieties are more common in the cerebellum and here are accompanied by cyst formation. The tumor may apparently represent little more than a cyst, but in the wall at one or several points the tumor tissue appears. The most common structure is that of a reticular tissue which encloses spaces filled with a homogeneous coagulated material. These spaces vary in size, they are all connected as the cavities in a sponge and the macroscopically visible cysts seem to be of the same nature as the small spaces in the reticulum which communicate with the large cysts. The walls of the cysts are in places dense and fibrous and in these there is condensation of the glia fibrils. When recently removed, the material is gelatinous in appearance, full of fluid, but this does not so readily escape from the cut surface as does the fluid in edematous connective tissue. The fibrils vary greatly in abundance, they run in the reticulum in close relation with the nuclei, and are most numerous along the blood vessels, forming with these a coarser reticulum which extends through the mass. The vessels are not numerous and hyalin degeneration of the walls leading to narrowing or occlusion of the lumina is not infrequent. The coagulated material pervading the tissue stains lightly and spaces are found within it seemingly the result of contraction during or after the coagulation. Where the condensed cyst wall comes in contact with the brain tissue the demarkation of the tumor is sharp, but in other places there is no delineation and the tumor tissue diffuses itself. In places the reticular character of the structure is lost, the tumor becomes cellular and the cells vary greatly in form and in size. The accompanying gliosis, if it can be described as such, in contradistinction to the tumor, is extreme; in several of the cases areas of cerebellar cortex were completely replaced by glia. In such cases astrocytes of enormous size with very many and long processes alongside of which the glia fibrils run are found. One of the cases of cerebellar cyst was accompanied by a syringo-myelia which undoubtedly represented an extension of the tumor. This tumor of the cerebellum was adherent to the surface of the fourth ventricle at its lower area and from this point a gliosis extended downward along the central canal. The neuroglia here was fibrillar, rather loose in texture and contained immense astrocytes. At the level of the third cervical vertebra a cystic cavity was formed which extended the entire length of the cord, varying in diameter from one-half to one and one-quarter centimeters. A peculiarity consisted in strands passing across the cavity and septa extending from the wall at intervals which more or less divided the cavity into areas. In some of the cross sections the cavity seemed to have obliterated the central

canal, in others this could be recognized in the wall. In the wall of the cavity a glia tissue much more fibrillar than the tumor in the cerebellum, loose in texture but without the outspoken reticular character and containing numbers of the large astrocytes, was found. While there seems little doubt that syringomyelia may be the result of hemorrhage and other pathological conditions in the spinal cord, in this case it resulted from the extension into the cord of a glioma of the cerebellum and the cavity was of the same nature as the cyst of the cerebellum.

In these gliomas of the cerebellum the fibrils may be but little developed. In the last case examined, a large cyst of the cerebellum in a boy of fourteen years, the main mass of the tumor, of very gelatinous consistence, was composed of a fine reticulum with numerous nuclei and wholly devoid of fibrils. Only in a few areas near the border of the cyst and in the wall were fibrils found. Hemorrhages, necroses and other evidences of degeneration are commonly lacking in these tumors. In two cases considerable amounts of blood pigment were found in large phagocytic cells, but this evidently was the result of operations several months before in which portions of the growth were removed. Fresh hemorrhages, the results of operations, are commonly present, but are easy to distinguish. These cerebellar cystic gliomas occur by preference in the middle line, but in the course of growth they may extend more to one side than the other. They give rise to internal hydrocephalus by blocking the aqueduct or the foramen of Majendie. The intracranial pressure is the result both of the growth of the tumor and the internal hydrocephalus. Six of these simple gliomas occurred in other parts of the cerebrum. They developed generally close beneath the cortex. The cyst development was not so marked as in the cerebellar tumors, but always present to some degree. The reticular character of the tissue is less marked and in places the tumor is distinctly cellular. Apparent transitions between the syncytium and separated cells can be seen. Around the nuclei in the syncytium homogeneous protoplasm is formed with numerous processes connected with the reticulum. The nucleus is always at the side of the cell, often slightly projecting from it, and often two nuclei at opposite sides are seen. Similar cells are seen in cortical gliosis and in the slight gliosis around metastatic tumors.

Following the comparison with the connective tissue tumors, the other class of gliomas have an outspoken cellular character and correspond to the atypical tumors of the connective tissue represented in the sarcomas. Every transition can be seen between the two types just as between fibroma and spindle cell sarcoma. The cellular gliomata are of more rapid growth, more vascular and hemorrhages and degenerations are common. How rapidly these tumors may grow is seen from the following case: A man, age about sixty-one years, entered the hospital April 12th with the usual symptoms of brain tumor. After a decompression operation on April 19th, at a second operation on April 25th, a round circumscribed tumor, 4 by 3 by 2.5 cm., of the right parietal lobe was removed. The tumor seemed to be without associated brain tissue. Microscopically it showed a sort of stroma composed of vessels with a small amount of connective tissue about them. These vessels were pretty regularly distributed and about midway between them was a tissue in which were rows of oblong and spindle shaped cells and between these cells, whose long axes were always at right angles to the vessels, was a loose network of neuroglia fibrils. There was no evidence of rapid growth in the tumor, the wound

healed rapidly and the individual left the hospital and was able to return to his business as a banker. Pressure and other symptoms quickly returned and he was admitted again on June 9th. An exploratory operation on June 16th showed a membrane resembling the external capsule of an abscess, and beneath this what appeared to be soft disorganized brain tissue. Patient died on August 11th. The brain weighed 2,700 grams. A large, bulging mass lay in the right hemisphere which obliterated the lateral ventricle and crowded over the left hemisphere. The tumor presented a large, reddish opaque, more or less softened mass, which extended from the middle of the frontal almost to the tip of the occipital lobe. Almost the entire central mass of the tumor was necrotic, but it was not possible to determine macroscopically the limits of extension. Numerous sections showed great similarity of structure. The center was so necrotic as to obliterate details of structure. At the cortex was a loose edematous tissue composed of cells of indefinite form, a small amount of indefinite intercellular substance and few characteristic fibrils. In this area were numerous cells with the peculiar type of direct division which has been already described. This tissue in places extended to the cortex, but usually between the cellular tumor and the cortex there was a thick mass of neuroglia in which the fibrils forming a close meshwork were so developed that the mass seemed to be composed of fibrils alone. Between the fibrils there were numbers of pale cells and large astrocytes. Even where the cortex appeared normal there was a marked gliosis and where the tumor approached the cortex and especially in the sulci there was a tissue composed of crowded large cells of the astrocyte type with closely packed fibrils about them. The relation of the cells and fibrils was so close that in many cases they could be traced through the cytoplasm. In places the tumor broke through into the meninges and seemed to cross sulci extending from the meninges to the cortex on the opposite side. In following the vessels the tumor evidently extended into the greatly dilated perivascular spaces which were filled with a cellular tissue containing few or no fibrils and different from the glia feltwork by which they were surrounded. Unless all the glia formation which surrounded the central tumor mass be regarded not as tumor but reactive gliosis, it was evident that there were two modes of extension. There was no place in which the normal glia seemed to be substituted by the gliosis, but this represented a transformation of the normal glia into the thick feltwork which became cellular toward the center. The other mode of extension was by advance of the cells from the center along the perivascular spaces.

Whether the great mass found at autopsy had developed in the three and one-half months following the operation or whether at the operation but a portion of the growth was removed, is uncertain. In the tumor found at autopsy in but a few places was a structure found at all corresponding with the tumor removed by operation.

In these cellular gliomas the most marked diffuseness of growth and accompanying gliosis are found as in the following example. A man fifty years of age with indefinite symptoms of tumor in frontal region. At the operation the tumor was not located. Death thirty hours after operation. Section of brain after formalin injection and hardening showed a tumor, 2 by 2.5 by 2 cm., seated in the frontal lobe adjoining the anterior central convolution. It was beneath the surface and chiefly around the sulcus between the first and second frontal convolution. Fresh thrombi from the operation were found in the vessels over it and the tumor contained numerous fresh hemorrhages.

The central part of the tumor was cellular with very few fibrils between the cells. The cells were extremely polymorphous, there being large giant cells, bands of spindle cells and cells of indefinite character. Most of the cells were separate, others forming part of a reticulum. The cells were growing both in the brain and in the arachnoid of the sulcus and in this had extended to the surface. Around the cellular tumor in most places there was a wide meshed, edematous reticulum. From the sulcus there extended a cap of tumor tissue, or at least of closely packed glia cells and fibrils, over the first frontal convolution almost to the longitudinal fissure. In all the surrounding cortex there was a great increase in the glia cells, especially in the trabant cells. In the pericellular spaces of the ganglion cells there were clusters of the satellite cells. In addition to them there were numbers of large branched astrocytes often in groups of two or three, and preferably about the vessels to which the cell processes were often attached. Astrocytes were also found around the ganglion cells with the protoplasm in contact seemingly representing phagocytosis of the ganglion cells. The ganglion cells nearly all showed degeneration, represented in loss of Nissl granules, irregular and broken cell contour, swelling, loss of chromatin in the nucleus. The myelin sheath stains, however, showed these, often swollen and varicose, extending through the area of gliosis and degeneration and to some extent into the cellular portion of the tumor. Sections of the brain elsewhere showed especially in all parts of the frontal lobe on the tumor side an extensive gliosis chiefly subcortical and more marked at the base of the sulci but extending also in the white matter. Throughout the area of gliosis astrocytes in great beauty were seen. The study of the relation of these cells to the fibrils showed that these extended along and in contact with the cell processes but did not pass into or terminate in the cell protoplasm. At the tip of the frontal lobe and at least 8 cm. from the site of the tumor an area of cortical gliosis was found which seemed to be of the same character as that formed by an extension of the tumor. Posteriorly the gliosis gradually diminished and none was found in the occipital lobe. In the other hemisphere the gliosis was present but in much less degree. The case presents much similarity to the case of diffuse glioma described by Lindau in the *Frankfurter Zeitschrift*.

One of the cases of cellular glioma differed in great degree from the others. The patient, a woman of forty-three, entered the hospital February 10, 1913, with characteristic symptoms of brain tumor. An exploratory operation on February 13th and on February 17th the dura was incised. The cortex protruded, the anterior part of cortex was very soft, the posterior firmer, the whole area very vascular. At a third operation the wound showed a bulging tumor mass, a large part of which was removed. The patient, much improved, left the hospital April 7th. Histologically, the softer portion of the tumor consisted of small cells with brightly staining nuclei somewhat resembling lymphoid cells. These lay often in small groups in a loose, very indefinite intercellular substance. There were no neuroglia fibrils in this part. The tumor strongly suggested a neuroblastoma. In the more solid parts of the tumor the cells were spindle in character and between these cells short and irregular neuroglia fibrils were found. Among the cells were here and there cells which in character of cytoplasm and nuclei closely resembled ganglion cells. The entire tumor, but especially the softer portion, resembled the neurogenic tissue of an early embryonic period.

Two of the cases could be regarded as mixed tumors. In one of these from a physician, age about thirty-six years, with symptoms of

a cerebellar tumor extending over four years, a large cyst was found in the cerebellum in the mid-line and in the wall a comparatively firm tumor tissue. The tissue was extraordinarily vascular; the vessels of small, almost capillary character formed a close network, and between the vessels there were masses of polyhedral cells with a few rather indefinite glia fibrils between them. The tumor suggested an origin from the choroid plexus, but this could not be determined. In this case also small cystic spaces were occasionally found between the cells. The vessels in this case were so numerous and formed such a definite part of the growth that I have considered the tumor an angio-glioma.

The other mixed tumor which I have called a glia-sarcoma came from a man of thirty-nine who entered the hospital on July 11th with symptoms of brain tumor which began four or five months previously. At an exploratory operation July 17th, the dura was opened and a tumor found beneath the cortex. At a further operation July 22d, a tumor mass weighing sixty-five grams was removed. Marked improvement followed the operation and the patient went home. A further operation was done on November 5th and death followed shortly after. The tumor mass removed at the operation and the tumor at autopsy showed the same character. A cellular glioma with few fibrils and a tissue seemingly proceeding from the walls of the numerous blood vessels, which was cellular and contained collagenous intercellular fibrils. The two tissues interlaced and were in close relation to each other but remained independent.

In addition to these tumors the origin of which from the neuroglia and the nature of the tissue composing them is clear, other tumors are met with which are more obscure, both as to origin and nature of tissue. Two tumors were found in the group, large in size, rapidly growing, cellular, the prevailing cell form spindle, the cells often arranged in masses around the numerous and thin walled vessels. In neither of the cases were the conditions favorable for the study of the relations of the tumor with the environment, but so far as this was possible the tumor tissue did not extend so diffusely as in other gliomas nor was there so marked a reactive gliosis. Elsewhere in the body these tumors would have been regarded from structure as spindle cell sarcomas. Here and there short glia fibrils were found between the cells. The tumors were not metastases from elsewhere in the body, they developed within the cortex and there was no relation with the membrane. These tumors were also placed among the cellular gliomas for the reason that in evident gliomas areas corresponding to this structure may occur, and other than the glia there is no tissue in the brain from which such a growth could originate. I have found in the twenty-five cases no examples of those types of gliomas which usually originate near the ventricles, and in which cysts and canals lined with cylindrical and often ciliated epithelium form a prominent feature.

(For discussion see page 425.)

TYPHOID FEVER IN INFANCY.

REPORT OF TWO CASES.

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MCCRAE, in *Modern Medicine*, gives seven types of typhoid infection.

1. With the usual intestinal lesions—the most common form.

2. With slight or atypical intestinal lesions.

3. Without intestinal lesions.

4. Local infection, as cholecystitis or meningitis without general infection of the body.

5. Terminal infections—intestines not involved in the two cases that occurred in a series of 1,500 at Johns Hopkins.

6. Paratyphoid—included because of the resemblance of the bacillus to that of typhoid and the practical identity of the clinical course with that of mild typhoid.

7. Mixed infection, as the pneumococcus or streptococcus in addition to the typhoid infection.

The second and third types are believed to be more common in infancy than at any other period of life.

The disease may exist in the fetus, but the pregnant woman with typhoid fever does not necessarily infect the unborn child. If the fetus becomes infected premature delivery of a dead child is probable. Of those born alive the great majority die within a short time. Morse collected sixteen congenital cases (diagnosis confirmed by autopsy or cultures) of whom ten were stillborn and the remaining six died in from five minutes to three weeks. The organs were carefully examined in twelve cases and the only one that showed intestinal lesions was the infant who lived three weeks. In this instance there were healed ulcers.

From the statements of well-known pediatricists one is compelled to believe that typhoid fever is rare in infancy. Holt states that he has seen only two undoubted cases under two years of age. Northrup stated in 1903 that he had seen only six cases under two years. Morse saw four cases at the Infants' Hospital in one year, and only two other cases had occurred in that hospital in twenty years. Kerley states that he has seen only four cases of proved typhoid under two years of age. On the other hand, Fischl, in *Pfaundler & Schlossmann's Diseases of Children*, mentions having treated a dozen cases in nursing infants. J. P. Crozer Griffith, at the 1912 meeting of the American Pediatric Society, presented a study of seventy-five cases of two and one-half years or less seen by himself or colleagues, more than half of them having been under his own observation. Nine were one year or under, thirty-six were from one to two years, and thirty were from two to two and one-half years of age. It would seem that typhoid in infancy must be more common in some localities than in others. The typhoid poison in the beginning affects the lymphatic system. Here the bacilli multiply and then invade the blood. The symptoms are believed to appear with this invasion and the destruction of the bacilli in the blood (McCrae). In the fetus

* Read at the May Meeting of the Brooklyn Medical Association.

there is a blood infection without involvement of the intestine. At least in some cases the same is true in infancy.

Perhaps the best idea of the symptoms can be got from Griffiths' study of seventy-five cases. He found onset rapid in over 60 per cent; spleen recorded as enlarged in 53 per cent; headache only in infants of two years or over; epistaxis in four cases; convulsions in three cases; vomiting common but not often severe—in some cases it was the most prominent symptom; diarrhœa much more common than in childhood; marked distension of abdomen not common, nor was abdominal pain or tenderness; heart and pulse seldom affected characteristically; bronchitis very frequent; tongue usually coated but not often dry; temperature, aside from frequent quick rise, not characteristic, nervous symptoms in 36 per cent were of excitations, restlessness or irritability—in somewhat smaller percentage dullness or stupor; hemorrhage very rare and perforation still more rare; duration in forty-eight cases from seven to thirty-two days; rose spots in 64 per cent, and appeared earlier, 30 per cent on sixth day or before.

Diagnosis.—Diagnosis is often difficult in the first week as it is in adults. At this period culturing the blood for the bacilli would seem to be the surest way of making the diagnosis. Probably the spleen will not yet be palpable, rose spots may not have appeared and the Widal will usually be negative. If there is frequent vomiting and diarrhœa with green and mucous stools it may be impossible at this time, without the recovery of the bacilli, to differentiate between typhoid fever and gastro-enteritis. We must exclude the more or less local causes of fever, as inflammatory conditions in the chest, appendicitis, otitis media, pyelitis, nephritis, meningitis, osteomyelitis and malignant endocarditis; also such diseases as malaria, grip and tuberculosis. Careful consideration of the symptoms, complete physical examination, and a leucocyte count will enable us to dismiss most of the diseases with local inflammation. In practically all local inflammations there is a leucocytosis, while in typhoid leucopenia is present, barring complications. The urine must be examined to exclude pyelitis and nephritis. Absence of muscular spasm and leucocytosis will usually enable us to decide against appendicitis. The existence of a palpable tumor does not exclude typhoid fever. Morse relates a case of typhoid in a child of six years in whom there was a palpable tumor in the region of the appendix due to enlarged lymphatic glands. If too great importance is attached to a marked change in the respiration-pulse ratio one might make an erroneous diagnosis of lobar pneumonia with delayed physical signs. Respiration in the young infant is a rather unstable quantity and the rate may be markedly increased by a variety of causes. For instance, in one of the cases that I report, the respirations at the height of the bronchitis (the abdomen being somewhat distended), were more than half as frequent as the pulse beats. In acute osteomyelitis there may be chills and very marked variations in the temperature, and long before the end of a week local signs will be found if searched for. In malignant endocarditis chills and marked variations in temperature are apt to be present. Usually signs of heart disease may be made out and there may be signs due to infarction. These cases may go into the so-called typhoid state. In case of doubt a culture of the blood should be made.

In typhoid we may have meningeal symptoms with or without a complicating meningitis. Lumbar puncture should be done and the

spinal fluid examined. Tuberculous meningitis may be difficult to differentiate from typhoid, especially that form in which during the first week the only cerebral symptom may be a tendency to sleep most of the time. Some authorities believe such cases are always instances of general miliary tuberculosis terminating in tuberculous meningitis. With such a picture before us we should bear in mind the fact that tuberculous meningitis is much more common in infancy than is typhoid fever. A von Pirquet test would be useful in excluding or suggesting meningitis of tubercular type. To exclude malaria we may examine for plasmodia or try a short vigorous course of quinine. The grip, particularly the gastro-intestinal type in which enlargement of the spleen may occur, might cause trouble in reaching an early diagnosis. Usually the short course will exclude typhoid. Osler mentions a form of grip in which fever, with or without chills, may be the only symptom and which may in rare cases last several weeks. Whether this form occurs in infancy I don't know. After the first week a positive Widal or typical rose spots will ordinarily be found, and while the absence of both during the second week does not compel us to reject typhoid as a diagnosis it should urge us to very carefully exclude all other causes before accepting that diagnosis. The active stage of syphilis should be thought of in this connection and the febrile stages of an early pseudo-leukemia.

Prognosis.—In the first year the prognosis is relatively very bad. In the second year it is much better but still relatively bad. After the second year it is relatively good.

Treatment.—The tendency now is to feed typhoid cases more liberally than formerly. Naturally the food must be adjusted to the age of the patient and to the individual digestive capacity. I believe milk should be diluted at least one-half in feeding any case in infancy. As to other food one should be guided by what the patient was able to take care of before the attack. The temperature needs no treatment unless very high or disturbing the patient. Cold packs are probably the best way of reducing it. Infants are not apt to bear cold baths well. Other treatment is symptomatic. The patient should be isolated and all excretions, utensils and clothing carefully disinfected. A doubtful case should be handled as if it were typhoid fever.

CASE No. 1.—Dennis L. Aet. 13 mo. 22 days. Child was brought to St. Christopher's Hospital for Babies on December 14, 1908, with the following history: Mother and a sister, nine years old, were in a hospital suffering with typhoid fever; this baby had been taken sick four days before with cough, fever and vomiting. The baby had had none of the diseases of childhood. On admission he weighed eighteen and one-half pounds, being fairly nourished; was somewhat dull mentally. Physical examination showed the heart normal, lungs normal except for some scattered dry rales; liver just below the free border of the ribs; spleen easily felt beyond border of ribs; no rose spots; no marked distension of abdomen; temperature 104°. On account of the vomiting and because the disease had only lasted four days a grain of calomel in divided doses was given and followed the next morning by a teaspoonful of castor oil. For the first three days there was high fever, the temperature reaching 104° to 105° each day; considerable vomiting; five to eight greenish movements containing mucus each day; little appetite, visible loss in flesh and increasing mental dulness. No rose spots appeared. The next

two days the temperature did not go above 102° but the child was worse—anorexia, vomiting and diarrhœas continued, the stupor increased and the tongue became somewhat dry and brown. The following two days the fever was higher, reaching 103.2° one day and 105.2° on the other; vomiting and diarrhœa continued; tongue became more dry and brown; stupor was marked and subsultus tendinum appeared. Once the vomited matter was reported to have looked as if it contained blood. Unfortunately it was not saved for inspection. There were no rose spots. Early the next day (the eighth in the hospital), he died. Widal taken two days before death was positive. Because of continued vomiting the only foods given were plain whey, whey diluted with 25 per cent lime-water and albumen water.

This case seems to have been one of the so-called house infections. The gastro-intestinal symptoms were unusually severe but otherwise the case closely resembled a severe typhoid in the adult. No autopsy could be obtained.

CASE No. 2.—Carlogia R. Aet. just two months. On February 24, 1914, this baby having been ill about a week was sent to St. Christopher's Hospital for Babies by Dr. Beery of the Department of Health, he having obtained a positive Widal reaction. Three other children in the family had typhoid fever.

On admission the baby was in such a feeble condition (probably from chilling), that only a superficial examination was made. Temperature was 101.5° . Heart was normal but very weak. Some coarse, moist and dry rales were heard over the chest. Spleen could not be palpated. Abdomen was moderately distended. Covering a good deal of the chest and abdomen was a macular eruption slightly resembling measles—perhaps the word mottling would best describe it. It did not involve the face or limbs. Six hours after admission the rectal temperature was 96° .

On the second day the nurse reported that the child had cried out sharply several times in the night and that once the body became quite rigid for a short time. No evidence of meningitis was found but presumably the child had a slight convulsion. On the fifth day a complete examination was made. Weight, eight pounds thirteen ounces, fairly nourished. Opening at anterior fontanelle, two by two inches; cervical axillary and inguinal glands are palpable, epitrochlear not. The eyes are now kept closed practically all the time. On opening the right one the lens is seen to be opaque and to have a yellowish tinge—a slight haziness surrounding the pupil. The left eye is a hazy gray over the outer one-fourth or one-third of the eye beneath the cornea which is perfectly transparent. (A couple of days later this haziness had spread so as to conceal the iris completely but did not affect the cornea.) There is no nasal discharge and the tongue is clean and moist. Heart is normal. Over the lungs are heard coarse, moist and dry rales—no dullness and no fine rales. Abdomen is slightly distended. Liver can be felt a little below the free border but spleen is not palpable. There is no rash of any sort. There is a double epididymitis, or at least a swelling of both testicles with no redness and little tenderness. This child died on its thirty-fourth day in the hospital. A brief summary of the more important symptoms follows: During the first week the temperature ranged up to 103.4° and on most days reached to within about a degree of this high point. During the second, third and fourth weeks the tempera-

ture was fairly regular with daily remissions at various hours, 102° or less being the usual high point. The temperature averaged lower in the fourth week than in the second and third weeks. In the six days of the fifth week the temperature ranged from 100° down to 94.8° .

The highest pulse rate noted was 120, the lowest 100. During the early stages a number of records were similar to this one taken at noon on the fourth day. Respiration 60. Pulse 112. Temperature 100.6° .

There was considerable bronchitis during the first ten days—after that practically none. There was no vomiting except that during his ten days he occasionally spat up a little. The bowel movements were at first green with mucus and curds. They soon improved in character. He averaged less than four stools daily—never had more than six in one day. For about two weeks there were restlessness and irritability; after that he was much quieter but there was no approach to stupor at any time. Spleen could not be palpated during the first two weeks, but as there was some abdominal distension and he was usually crying at time of examination it may have been enlarged. The last note in regard to the spleen was made six days before death, at which time it was about one-third inch beyond the margin of the ribs. A positive Widal reaction was obtained one week after admission.

There are a number of rather unusual features in this case—the age of the patient; the prolonged course, thirty-four days in the hospital and sick about a week before admission; the low temperature curve, the high point being 103.4° , while most of the time the daily high point was between 101° and 102° ; the relatively slow pulse considering the age; the very mild gastro-intestinal symptoms; the peculiar rash with no rose spots at any time; the double epididymitis or perhaps thrombosis in the testicles; pyuria with acid urine, discovered on the twenty-third day—apparently having no effect on the temperature; a small ischio-rectal abscess, three days before death, and finally the complication in the eyes, believed to be due to obstruction in the uveal tracts. The left eye, which was at one time entirely opaque behind the cornea, cleared up in the course of a couple of weeks so that only a slight grayish opacity in the region of the pupil remained. The yellowish opacity of the right eye cleared little if at all. This case, like the first, seems one of direct infection. No autopsy could be obtained.

DIVERTICULITIS OF THE COLON: WITH ESPECIAL REFERENCE TO ACUTE PERFORATION.*

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DIVERTICULITIS has been largely unknown to the surgeon until within a few years, and our information is still so incomplete that it is desirable to have all cases recorded. The disease is less rare than has been generally supposed, and those observers who are on the watch for it will overlook it less often, both in the living subject and in the post-mortem room, than has

* Read before the Brooklyn Surgical Society, April 2, 1914.

been the case in the past. I have personally observed three cases which I believe to come in this category. The last of these cases is of considerable importance, and I will detail it at the outset.

On the morning of February 6, 1914, Mr. J. D., aged fifty-two, left home for his place of business in his usual condition of supposedly good health. He had been irregular at his meals for some months owing to the demands of his work, and felt that he might be slightly depressed as a consequence, but considered his appetite and digestion good. His weight had remained about the same and he had kept regularly at his work as a salesman. Shortly after his arrival he was attacked with a sudden, sharp pain in his abdomen, far more severe than any he had ever previously experienced, located about the navel and extending downward. He made his way to a water-closet, hoping to gain relief by a movement of the bowels, but was unsuccessful. He was placed on a cot by his fellow-workers and dosed in various ways, but the pain became worse. I could not gather that he suffered from actual shock. He was nauseated, but only vomited once, after some sort of medicine was given him. It was soon decided to call an ambulance, and he was brought to the Brooklyn Hospital, where I saw him two hours after the onset of the pain. At that time he was groaning with pain which would abate at intervals, and which he located in the lower abdomen.

Examination showed a rigid abdomen, the rigidity most marked below the navel. Tenderness was marked over the whole lower abdomen, but more so on the left side. His pulse was about 90, and temperature subnormal (97° F.). The diagnosis of an intra-abdominal calamity of a surgical nature was made, and operation proceeded with, four hours after the initial symptoms.

A median incision below the navel disclosed a small quantity of thin turbid fluid, and exploration with the hand disclosed at once a mass in the pelvis. The peritoneum was dark red in color, and active peritonitis was well under way in that quarter of the abdomen. As the mass was delivered into the incision, a small quantity of muco-purulent fluid was sponged away, which had no odor. The mass was not adherent, and was found to consist of four to five inches of the lower sigmoid, completely studded with 50 to 100 thin-walled, flask-shaped diverticula, from $\frac{1}{8}$ to $\frac{1}{2}$ inch in diameter. Most of the pouches were of the smaller size, bluish in color, with paper-thin, compressible walls, and arranged generally over the whole bowel, between the longitudinal muscle bands. Considering the poor prognosis, it was thought unwise to delay to search for the point of perforation, but to make an artificial anus immediately by stitching the colon proximal to the mass into the median wound, and draining the abdominal cavity with tube and wicking drains. A rubber drainage tube, $\frac{3}{4}$ inch in diameter was at once inserted into the colostomy opening in an upward direction, thus directing all fecal contents to the surface.

The patient was very ill for several days, but made a good recovery, and I now present him to you after eight weeks, with the colostomy still acting, and in other ways in very good condition. I can find no instance in the literature of recovery from acute perforation of a diverticulum directly into the abdominal cavity and Lockhart Mummery, in his *Diseases of the Colon*, published in 1910, had been able to find no case successfully operated on where the general peritoneal cavity was infected.

ETIOLOGY.

Intestinal diverticula are divided into two classes, the congenital or true diverticula, of which Meckel's diverticulum is an instance, and the acquired, or false diverticula, with which we have to deal in our present discussion. The congenital diverticula are made up of all the coats of the bowel-wall, but the false diverticula are merely hernial protrusions of the mucous membrane through the separated fibres of the muscular wall of the bowel, at the start carrying a few muscle fibres with them, which later atrophy and disappear.

They occur in both the small and the large intestine, but rarely give rise to surgical complications except in the colon, and most frequently in its sigmoid flexure. They vary in size from a small shot to a walnut, but usually are of the size of a pea to a chestnut. They may push into the mesentery or out of any portion of the bowel wall, or into the appendices epiploicæ. They may be single but are in most cases multiple. They usually contain fecal material.

Mummery considers these diverticula to be simple pressure herniæ of the mucous membrane produced in most cases by long-standing constipation. While this would seem probable, in view of their similarity to diverticula of the bladder due to long standing obstruction, constipation cannot be the essential cause. If so, they would be more common in women, which is not the case. The case above detailed had never been constipated in his life, and his habit was to have two or more movements daily. In fact, when away from his accustomed haunts, his first query was invariably as to the location of the toilet. A second case of diverticulitis observed by me had a history of ten years of diarrhœa before the onset of symptoms of surgical complications. A third case, that of a woman, had also no chronic constipation. The essential thing in causation must be a weakened muscular wall. It usually occurs past fifty years of age, with an average of sixty years. Both my male patients were alcoholics, the first one drinking very regularly daily but not becoming intoxicated, the second one being an excessive and continuous drinker. That alcoholics are very deficient in muscular tone in the walls of the hollow viscera is, I believe, generally accepted. A tendency towards obesity seems also causative. As a result of the presence of diverticula in the colon wall, an inflammatory thickening may be set up, which may result in a dense mass of fibrous tissue around the diverticula which may closely simulate malignant disease, and even result in actual obstruction. Cases of supposed cures of cancer after excision of the colon wall have been not cancer at all, but chronic diverticulitis, in many instances, as have cases of cures of obstruction after colostomy for supposed malignant disease. Or ulcerative processes may be set up causing fistulæ between bladder and sigmoid. Localized abscesses may also be set up in the left iliac fascia, forming the so-called "left-sided appendicitis" and these have been operated on successfully in a number of instances. Extensive adhesions may sometimes occur, including the various pelvic organs, and at times other loops of bowel sufficiently to cause obstruction of the neighboring loop.

CLINICAL DIAGNOSIS.

It is not likely that symptoms are produced by acquired diverticula of the intestine until infection through them gives rise to the inflammatory thickening termed by Mummery "pericolitis" and by Wilson "peridiverticulitis." Symptoms from the intestinal lumen itself seem to be lacking before this stage, and Wilson states that the peridiverticulitis may go on to a considerable degree without involvement of the mucous membrane. The patient I have first mentioned here had no symptoms whatever until perforation occurred.

The third case of diverticulitis which I have to report was in what I might call the stage of uncomplicated peridiverticulitis when I first saw her, and she stated that she had noticed some mucus and occasionally very small quantities of blood in the stools for a period of ten years previously. The patient was a lady of sixty, and except for a very neurotic temperament was in generally good health. She was often conscious of tumefaction and discomfort in the right sight of her abdomen, but had never had any acute attacks of pain or been confined to bed. Her bowels moved regularly, and when rarely she was constipated was easily relieved by taking powdered slippery-elm as a laxative. The abdomen felt most comfortable with some form of support, or when lying down. Examination disclosed an elongate, sausage-like mass in the transverse colon extending some four inches or more from the hepatic flexure. The same mass had been found by a stomach specialist in Buffalo a year or more before. Her health became variable with intestinal discomfort. Operation was not urged, which I believe was a mistake. While her health was improving a year later she suddenly died of symptoms apparently due to perforation. The diagnosis was not confirmed by autopsy, but the termination was quite in keeping with my original diagnosis, and I shall continue to regard the case as one of peridiverticulitis, probably of a number of years duration.

The differentiation of these instances of peridiverticulitis from cancer both before and at the time of operation is difficult. At times, only a detailed pathological examination of the excised mass will determine the true pathology. My second case referred to above was that of a man of forty-seven, who had been the subject of chronic diarrhœa for ten years. Symptoms of obstructive nature finally developed, and the patient was removed to a hospital for operation. The operation was not performed as the symptoms improved after some days. Tenderness over the lower abdomen, and a sense of resistance led to operation some months later. A thickened, densely adherent lower sigmoid was disclosed which was accidentally torn in the manipulations, and a fecal fistula resulted. No diverticulum could be demonstrated, but it was decided that the diagnosis lay between diverticulitis and cancer. Great improvement resulted in the patient's condition excluding the possibility of cancer. An attempt to close the fistula later was unsuccessful. When seen some two years after the first operation the patient was in good health, the bowels moving regularly, and the fecal fistula discharging small amounts of pus and gas at intervals.

In addition to the various ulcerative lesions previously mentioned which may result from peridiverticulitis, and which produce symptoms characteristic of themselves, the final outcome

may be carcinoma itself. Of twenty-seven cases of advanced peridiverticulitis, Wilson found carcinoma present in seven.

SURGICAL TREATMENT.

The statistics of Mummery show diverticulitis to be extremely fatal if not operated on, and of the cases collected by him who were operated on, 44 per cent died. The best results were in cases accompanied with tumor formation where the diagnosis of cancer had been usually made before operation, and where resection or colostomy was done. Here the mortality was 25 per cent. He states that in a number of instances the surgeon abandoned the operation, under the impression that he was dealing with hopeless carcinoma, whereas had he known he was dealing with a simple inflammatory tumor, he might have successfully resected it. A number of cases of successful drainage of left-sided abscesses have been reported in recent years.

The treatment of diverticulitis of the colon must, of course, depend upon the condition present. Excision and anastomosis should be done wherever possible in order to forestall possible later complications. My third case might have been saved by timely excision. In the presence of obstruction, a temporary artificial anus should be made, and if necessary a resection done later. In the presence of acute perforation into the general peritoneal cavity, I believe my own experience should show the value of an artificial anus here, and that reliance should not be placed on an attempt to close the perforation and then to drain the peritoneal cavity. In my own case, there were many diverticula which might have been readily ruptured, and it was best to throw the segment of bowel out of use at once. Whether it will seem wise to excise it later in this case is a question to be decided. The patient is very averse to being left with a permanent colostomy, and my plan has been to attempt an excision and end to end anastomosis while the artificial anus is allowed to remain, and as a third step to later close the artificial anus. It was my plan at the time of the original operation to treat the area of colon involved by the Mickulicz three-stage operation devised for cancer of the colon, bringing the involved loop out of the incision, removing it later by cautery and still later closing the opening into the bowel. This plan was not feasible to carry out, as the tension on the loop was too great, the involved area being low down in the sigmoid. I believe, however, that this would be the best procedure where practicable. In the presence of perforative peritonitis, where a medium incision had been made, it might be best to bring the loop of bowel through a second incision in the left lower abdomen, leaving the necessary drainage in the first incision, which would both facilitate the matter of drainage and make less tension on the loop brought out.

Simple drainage in cases of left-sided localized abscess seems to have been sufficient to bring about cure in most of such cases. The many other possible complications of peridiverticulitis must, of course, be treated on general surgical principles, always keeping in mind the nature of the underlying cause. It would seem wise also, in cases of operative recovery, to so guide the patient's mode of life afterward that conditions tending to weaken the musculature of the bowel wall—chronic constipation, alcoholism, obesity, etc.,—be avoided, lest other areas become involved.

SUMMARY.

Diverticulitis of the large bowel is a dangerous and not extremely rare condition, and the surgeon should be on the watch for it, especially in left-sided lesions.

Where the disease may be recognized before end-complications occur excision should be practised, as the mortality is extremely high otherwise, 70 per cent of all the cases collected by Mummery having died of general peritonitis, obstruction, abscess, or pyemia.

In intestinal obstruction or in acute perforation in the general peritoneal cavity, it would be well to practice the three-stage operation of Mickulicz as devised for malignant growths of the colon, combined with immediate opening and drainage of the bowel.

In all cases of laparotomy for suspected perforative peritonitis, the surgeon should not omit to explore the sigmoid area where perforation is not found elsewhere.

PURE MILK OR CHEMICALLY MODIFIED MILK IN INFANT FEEDING.*

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IT is hoped that this title will immediately suggest to everyone present the questions, Why should these two things be contrasted?—In what possible way could there be any difference of opinion in regard to the value of both in infant feeding? Nevertheless we must bear in mind the peculiar tendency of medical theories to swing from one extreme to another in the course of a generation, and to emphasize first one phase of the truth and then another at the expense of the truth as a whole. In nothing has this been more pronounced than in the theories of infant feeding. The men with a purely chemical point of view have, to a large extent, ignored the question of milk infection, while many clinicians have declared that the dilution or modification of clean, fresh milk is hardly necessary in infant feeding. In 1846 Klencke ascribed the danger of milk from tuberculous cows to the chemical changes,—i. e., a decrease in casein, fat and sugar and an increase in albumen to as much as 15 per cent (probably pus). In 1868 West, in his *Diseases of Infancy and Childhood*, said that a slight alteration of this kind must render the milk unfit for the nutriment of a delicate infant. A little later Biedert called attention to the chemical differences between human and cows' milk, and proved to the satisfaction of his generation that the "curd" was the dangerous element which must be modified for successful feeding. In this country Rotch was largely responsible for the adoption of Biedert's teaching, and for many years the high-fat-low-proteid food was in almost universal use. Perhaps the *reductio ad absurdum* to which this theory was reduced in one of our New York medical schools was partially responsible for the reaction against it. It is not many years since Holt and others pointed out the very serious danger of high fat feeding and the consequent fat intolerance, and now it has been necessary for Hess

*Read at the annual meeting of the American Association of Medical Milk Commission, Rochester, N. Y., June 19, 1914.

and Talbot to point out the very obvious fact that "curds is curds," and that the nutrition of an infant would undoubtedly be better if these foreign bodies were not allowed to form in the digestive tract.

None of these previous steps in the evolution of our knowledge of digestive processes has in this country delayed the equally important progress in the production of clean milk. Here again, we are indebted to the pioneer work of Rotch who was equally interested in both problems, as have been most of those who have followed him. That this country has made such excellent progress in the pure milk propaganda is also due to the strength of the conviction among clinicians that raw milk is essential to the highest state of nutrition, and that cooked milk is responsible for scorbutus and other forms of malnutrition. It has undoubtedly been fortunate for the nation that those who viewed this theory with a feeling of tolerant superiority have not been permitted to supervise the milk supply.

On the other hand, in England and on the continent the almost universal custom of cooking milk for infant feeding has tended to increase the prevalence of malnutrition and to minimize the danger of gastro-enteric infection. That is, the number of cases of mal-assimilation is greater and the number of cases of infection is less than would be the case if raw milk of average grade were used. The wet nurse has also been an important factor in the situation. Although there have always been some men in Europe to emphasize the need of clean, raw milk they appear to have entertained the idea more or less as a theory. In Pfaundler and Schlossmann, Prof. Raudnitz, of Prague, says: "Pasteurization is a very poor substitute for proper cooling," and Camerer, of Stuttgart, says: "It is nearly certain that the sterilization of milk is of influence in the causation of scurvy." Nevertheless he advises his patients to boil milk from two to five minutes in winter and from five to ten in summer. Undoubtedly conditions are better in London than they were nine years ago, but at that time Dr. Carpenter wrote to me in his characteristic style as follows:

"The care of milk? There is no care of milk; it just takes care of itself from the time it leaves the manure-begrimed hands of the milker, on its way to the railway station, by the train, dragged through the metropolitan streets to its destination the milk depots, then in the milk carts to the large private houses and the smaller milk shops and finally to the consumer, who fetches it in person and who has as much knowledge of how to keep the filthy stuff as she has of taming a lion. The sanitary authorities do all they can to prevent adulteration, and for that they possess full powers, but they have no power to compel clean collection and clean transit."

Fortunately since that letter was written there has been a revision of the sanitary code as relating to the milk supply, and as we all know much is being done all over Great Britain in the way of baby welfare work. Nevertheless Vincent's recent reports indicate that the milk is still a source of a considerable amount of gastro-intestinal disease.

Although this brief review of well-known facts may appear to be irrelevant, I believe they point to explain the latest radical tendency in infant feeding. For some reason the Finkelstein idea seems to have overshadowed everything else in Germany. This may be due to the proverbial fondness of the Teutonic mind for complex methods of solving simple problems. Many of them are at present

vying with each other in their efforts to prove that the age, source, previous condition and bacterial content of the milk from which the Finkelstein complex is manufactured, are of no practical importance. Some of the rumors are almost unfit for publication. From a strictly chemical point of view this idea may be quite true, but its promulgation will not help to secure a clean, pure milk supply for those of us who may have a merely sentimental desire for it. It is equally true that although the gelatin and fats produced at Barren Island have high food value, there is no great demand for them on the part of housekeepers, and the pure food laws are not likely to be modified to permit their sale.

Recently the Finkelstein school has gone a step farther in advising the use of casein milk in the routine feeding of healthy infants. In No. 12 of the *Monatshrift f. Kinder.* of last year Heim and John report their experience in feeding forty-five healthy children in this way. They evidently took great pleasure in proclaiming that the children were all well nourished after the experiment, but there is nothing to indicate that the babies would not have done quite as well on some simple modification of clean raw milk.

In this country less and less emphasis is being placed upon milk infection as a cause of digestive disturbances, particularly in our northern and western cities in which the milk supply has been so markedly improved. The reports of Bowditch from Boston and Vincent from London have been received with polite scepticism in most instances, in spite of the very careful work recorded. The attitude of New York pediatricists has a decided influence upon the beliefs of the rest of the country, and there is a strong tendency among some of the younger men of that city to swallow whole whatever the followers of Finkelstein may promulgate.

If the A. A. M. M. C. is to perform its greatest use, it must meet this situation wisely and temperately. We must give no justification for the accusation of being called raw food cranks or bacteriamanics. We must admit fully whatever is true in regard to the safety of using ordinary grades of milk for the preparation of infant foods that are to be cooked in the process. We must lay great stress upon the fact that the selection of certified milk is only the first step in determining the proper food for the individual child. Milk commissions serve the public in two ways. First, in producing a few quarts of certified milk for the small percentage of the population that will use it. The second and far more important use consists in setting a standard which shall not be impossible of attainment in the production of all milk to be used in infant feeding. Milk commissions must advocate methods in all the processes of milk production which may be attained by conscientious effort without prohibitive initial expense in small communities, and they should encourage and not discourage the organization of neighboring commissions whenever and wherever their establishment will improve the general milk supply, even if the highest standards cannot be enforced rigidly at the outset.



EDITORIAL



MEDICINE AS PRACTICED.

THE New York *Times*, commenting editorially upon an address of Dr. Frederick S. Lee to the students of the College of Physicians and Surgeons, emphasizes the need for a greater degree of scientific accuracy in bedside work. Dr. Lee is credited with the statement that there is a "sharp break" in the middle of the four years' course of medical study when the change from abstract to applied medicine occurs and further on he is interpreted as saying:

"If physiological research were better endowed and if the bedside doctor could forget his groups of symptoms in learning what the physiologist, the pathologist, the pharmacologist, and the bacteriologist are doing, patients would have a better chance of getting well. That is, the causes of their troubles would be got at and removed. But such a result can be accomplished only through leaders who have forsaken the pecuniary rewards of private practice in their devotion to the science of medicine."

Happily the day may sometime dawn when the work of the clinician will be so far enlightened by that of the laboratory worker as to reduce the human problem to an algebraic formula. It would greatly simplify the practice of medicine could this thing be. The problem which confronts the physician in sickness is, however, almost always complicated by the personal equation. It may be trite but is none the less true that the text-book theory so laboriously acquired in the medical school is only too apt to be found lacking until prolonged bedside experience has taught one how varied is the picture and how difficult the solution of even ordinary ailments. If the interpretation that the *Times* places on Dr. Lee's address is meant to show the unwisdom of casting about experimentally rather than subjecting the case before one to systematic, methodical, clinical and laboratory analysis, then we heartily say Amen. But if Dr. Lee is to be construed as meaning that clinical experience at the bedside is of less value than laboratory diagnosis, we don't believe he meant it and doubt if he said it. The human subject cannot be analyzed as can the laboratory subject; he must be considered *in vivo* not *in vitro*, he must be individualized; and the power to analyse the individual grows from the constant exercise of bedside observation into that rare intuition which is in the trained clinician the spontaneous expression of his accumulated experience. If the object of the medical school today is to reduce the practice of medicine to rule of thumb, then we are indeed retrograding into "schools" and not broadening in a "universal scientific method of thought and investigation." By all means let us have all the training possible, let us reduce as much as we may to a scientific basis, but in so doing let the cardinal fact never be lost sight of that the application of medical knowledge to the individual will still remain an art so long as the individual remains a human being.

H. G. W.

A TRIBUTE TO SURGEON GENERAL GORGAS.

THE *Southern Medical Journal* in its September number contributes an appreciative editorial on what Surgeon General Gorgas has accomplished, and urges the National Government to still further utilize his capacity for organization by placing him at the head of a Department of Public Health as its first Secretary.

The need for such a department is only too evident as are the reasons why it is not established. Just as the only reasons why parcels post was so difficult to procure were the express companies, so are the organized dealers in profitable proprietaries, inferior products, and their correlated industries, the quagmire in which the desired legislation sticks.

The *Southern Medical Journal* is right when it urges more substantial recognition for General Gorgas, and there can be no question of the value of his services to the country could he be placed in charge of an unhampered Department of Public Health. We sincerely hope that the faith that the *Southern Medical Journal* professes "in a Democratic Congress to meet the Nation's greatest need" by creating a National Department of Health will be fully realized. H. G. W.

PROPRIETARIES.

THE medical public has undoubtedly received an imitation type-written circular letter from a so-called pharmacal company offering samples of its products and endeavoring to explain why those products should be taken up and recommended by the medical profession. The reasonableness of their logic is shown in two sentences, stating that the general public is making a great mistake by taking laxatives without medical advice, and that constipation is, therefore, rapidly becoming a national disease, but that their particular preparation is an exception to this general rule and should be more widely employed. As this particular preparation has been before the general public for some time and was first brought to their attention through catchy street car advertising, it seems a little late to ask the medical profession to adopt it, especially as no statement of the contents or dosage is made to enable physicians to judge for themselves of the character and efficiency of the preparation recommended. If there were nothing else to condemn this particular pharmacal, the ungrammatical and contradictory circular should raise a suspicion that the compound that it recommends might be equally crude.

Why should physicians recommend proprietaries? Why should they without a *quid pro quo* aid in furthering a private enterprise at the expense of their patients and themselves? Why should they recommend to their patients or use themselves a compound of the contents of which they are ignorant? This is but one example of an evil which has grown to such proportions that one has but to observe the shelves of any average pharmacy to be impressed with the number and variety of proprietaries that the druggist is forced to keep in stock. From his standpoint this is a hardship, inasmuch as his legitimate profit on the ordinary proprietaries is too small to make it worth while to carry them unless he buys in quantity. There are few proprietaries that cannot be made up from the National Formulary equally well, with larger profit to the pharmacist and less cost to the patient. There are few proprietaries that cannot be bought at marked down rates in department stores and elsewhere to the detriment of pharmacist and doctor alike;

yes, and patient too. There are few proprietaries that do not on their labels and in the circulars which accompany them exaggerate the results which may be expected from their use.

From every viewpoint the proprietary habit is disadvantageous to physician and patient alike. The extent to which the proprietary business has grown may be readily gauged by the opposition shown to every endeavor to put through rational public health laws. The recently enacted Boylan Law, while it curbs the physician, exempts the patent medicine vendor. The Pure Food Law has been bitterly assailed and is constantly under attack by a paid propaganda, and efforts to establish a National Department of Health have brought out into the open as well organized a lobby as ever acted at the National Capitol and for all of these things physicians are largely to blame. The fable of the man who warmed an adder by the fire and the other who permitted a camel to put his head into the tent are recommended for the consolation of physicians who use proprietaries.

H. G. W.





Society Transactions



TRANSACTIONS OF THE BROOKLYN PATHOLOGICAL SOCIETY.

Regular Meeting, April 9, 1914.

The President, DR. S. R. BLATTEIS, in the Chair.

Address: Glioma, With Lantern Slide Demonstration.

By Dr. W. T. Councilman, of Harvard University.

(For original paper see page 401.)

DR. ISRAEL STRAUSS, of Manhattan, in opening the discussion, said:—"It has certainly been a great pleasure to me to listen to this excellent paper and this incomparable demonstration of Dr. Councilman.

"I think that Dr. Councilman will bear me out in the statement that tumors of the brain are really much more common than most people suppose; that the nervous system is a part of the body which is very apt to have malignant growths of one kind or another.

"Now, I was very glad to hear Dr. Councilman speak in his paper of the infiltration of the glioma because I so frequently hear physicians speak of gliomata as being encapsulated and they ask the clinician very often whether he thinks the tumor is an encapsulated glioma or an infiltrating one. Of course, this question is very apropos because being under the impression that if it is encapsulated an operative procedure will be a favorable one, that if it is infiltrating it is not a favorable case for operation.

"Personally, I have never seen a true encapsulated glioma. All that I have ever seen were, as Dr. Councilman has shown, infiltrating.

"I have also seen these tumors removed, apparently of circumscribed type, like this large glioma shown by Dr. Councilman, and with the same result, namely, that after a certain length of time there has been a recurrence. I remember particularly one tumor in a child which was localized in the motor region of the cortex and which was very well removed by a surgeon, apparently everything of a tumor nature being taken away and there being nothing left but the normal cortex and subcortex, yet within a year the tumor had recurred and had grown extensively and the child succumbed. I saw a similar procedure not long ago in a second individual with the same result, except that the surgeon attempted a second removal and there was recurrence.

"Another point which was brought out by Dr. Councilman and which, to my mind, is of practical importance, is the question of these cysts. I have on three occasions been shown tumors which the surgeon had operated upon and he said that he had operated upon a cerebellar cyst and stated that the patient had improved so much he felt certain that he had cured the individual.

"I came to the conclusion some time ago that there was no such thing as a cerebellar cyst unless there had possibly been some parasite forming a cyst, and that all these cysts were gliomata. In every case of cysts which I have examined I found tumor tissue.

"Regarding the spreading out into the meninges: That is a very rare condition. I have seen one case and reported it, in which the glioma had spread all over the base of the brain and had grown right into the pia mater and gone over the pons, the interpeduncular space and even gone over the medulla. It did not go to the cord.

"I was also rather pleased to hear Dr. Councilman avoid the word gliosarcoma, except in one instance. Many regard a glial-tumor as the ordinary type with fibrils and a few cells (the type which Dr. Councilman showed

is more or less diffuse, infiltrated), but the growth which is very rich in cells some are apt to consider as gliosarcoma. I think that Mallory in a measure is right in calling all these tumors gliomata. If you want to speak of those as sarcoma in the sense that they are rapidly growing, we might add that term sarcoma to define their malignancy, but the others are almost as malignant, though they may not grow quite so rapidly.

"Dr. Councilman restricted the word sarcoma to a mixed tumor, one in which he found his connective tissue fibrils as well as his glial-fibrils.

"In speaking of the question of cellular growth it is remarkable how slowly some of these gliomata grow. I know of one case in which the symptoms dated back five years before the exitus. The tumor at the time of the death of the individual occupied the entire temporo-sphenoidal lobe. It was a large tumor. I found it loaded with large cells, large astrocytes. In fact, the histological picture of this tumor in parts would almost represent a carcinoma. Apparently in this individual, the type of cell had nothing to do with the rate of growth because here was a man with a tumor absolutely five years in duration and yet it was one that contained practically nothing but these large cells, closely packed together and with a few fibrils.

"Another interesting point from a clinical standpoint is the fact that these tumors go along very frequently quiescently until there is a hemorrhage and this gives us frequently the first indication of symptoms.

"I wonder, too, in this connection if Dr. Councilman has ever considered the effect of trauma upon these gliomata. I have in mind two cases in which the individuals were perfectly well, apparently, until they received a head injury. One of these cases immediately after the injury had convulsions, became delirious and, in fact, presented the picture of general paresis. Now the picture of general paresis was so prominent in this individual that one of the best neurologists of Philadelphia diagnosed it as a case of paresis. I subsequently saw the case and was able to obtain the brain at autopsy and it showed a tremendous tumor, occupying the region of both optic thalami as Dr. Councilman showed in one case. The individual was perfectly well, apparently, until this trauma and then these symptoms came on. That was a trial case so that there came up the medico-legal question as to whether or not the tumor was caused by the trauma. I couldn't say that it was. I believe that the tumor was present there before the trauma. Whether the trauma stimulated it or not I do not know.

"Another case came to my notice where an individual apparently perfectly well, received a trauma and again in two weeks following that symptoms developed strangely simulating general paresis in very many ways. The man died and in that case there was a large tumor occupying the temporo-sphenoidal lobe and here a glioma which was of the type that Strube first described, one containing a tremendous number of large astrocytes, was found. It is a difficult point to decide whether the trauma had any influence on the growth or not, but I think personally it might have had some. Dr. Councilman has called your attention to the fact that the glioma is an infiltrating tumor and that you find in these tumors that many of the myelin sheaths are preserved.

"We have in the central nervous system a disease called multiple sclerosis and it may be extensive or limited to very small areas of the brain. This disease is also a growth of glio.

"What the cause of multiple sclerosis is we do not know. We assume that it is due to some infectious process. I have often wondered whether the glioma itself in the beginning may not start as a gliosis and a stimulus be provided which will start this glial growth into activity and produce the picture that we see commonly as glioma.

"Regarding the irritative gliosis: I was very much interested in that because very often we have symptoms in the brain tumor, in glioma, which are not to be explained by the tumor itself. I mean by that that the localization of the tumor does not explain all the symptoms that the case presents clinically. Reighardt has tried to explain this very much on his theory of edema and very likely the edema which we find very frequently in the neighborhood of gliomata has some effect on producing the symptoms.

"From seeing these slides tonight, I think that this irritative gliosis which Dr. Councilman has shown to be so extensive and so widespread may account for the presence of the symptoms which are distant from the tumor.

"Lastly, any one who has seen these slides tonight must be convinced of one thing and that is that we are dealing here unfortunately with a very hopeless condition from a therapeutic standpoint. I think it is the

experience of all of us that there is no tumor in the body offering so little hope from the standpoint of surgery as glioma. You can see in the case which Dr. Councilman showed, which apparently was so circumscribed, you remove it and then there was such a rapid recurrence from a futile operation. In other cases where you have marked infiltration you can see again how hopeless it is. I think, however, that something may come from a different direction, but what that is I do not know exactly. I have conceived the idea that possibly as in the case of fibromata if the X-ray could be directed to the gliomata in the same fashion we might achieve some results, because the tumors being so slow growing in many cases they may not be very non-resistant to the X-ray, and I was surprised in reading the proceedings of the last Neurological Congress in Germany, to see a report there by Oppenheim, of Berlin, in which he stated that he and Krause had been trying the effect of the X-ray upon inoperable gliomata of the brain after they had trephined and exposed them, but he stated that up to then the result had not been definite enough to be reported upon.

"I don't want the impression to be gathered from my previous remarks that I would not have a brain tumor operated upon. Now, personally, I believe that every tumor, when a diagnosis is made, deserves an operation. There is no question about that. I also believe and know that some of these cases of cysts in the cerebellum have been operated upon and the cyst has been removed as well as possible (I am not speaking of relief from symptoms because we can get none by a decompression operation), but unfortunately they go on for a long time as cured and again the cyst grows. I do not deny that; and I know of cases where gliomatous tumors have been exposed and have been left in place and the individual has remained free from symptoms for years. I know of one case of a young woman in Manhattan today who is perfectly well, though unfortunately blind, a case which occurred in the days before the decompression operation. She lost her sight following optic neuritis. She goes about freely and has developed into a very highly intellectual individual.

"Any one seeing these gliomas knows that some of them cease growing, remain as they are and give no further trouble.

"There is no reason why the surgeon should not be called in in every case and everything be done to relieve the individual if only for a short time.

"My only point was that when the surgeon tries to remove these tumors unfortunately he removes what he can and yet these growths have a great tendency to recur, too often, in my opinion, and I think that any one looking over the statistics of brain surgery will agree, and I think that even Cushing will admit, that while there is a good deal done in brain surgery, there is a great deal more to be done that we wish could be done."

DR. CARROLL L. NICHOLS, in discussion, said:—"It has certainly been enjoyable to listen to Dr. Councilman's paper. I am sure, however, he does not want us to think that his patients die almost immediately after the operation, as one or two of the cases which he mentioned did. Dr. Strauss also gave a rather pessimistic outlook.

"Howard Tooth has published a résumé of a series of cases he has operated upon. Most of them were glioma, and all of them tumors of the brain, and from those cases of glioma that died shortly after the operation to one that lasted nine years, all of which were verified by post-mortem, he struck an average survival of about a year (sixteen months to be exact from the whole number of cases reported). For some reason he concluded that the one case which lived for such a long time after operation (that is, nine years) ought not to be included in the list, so, withdrawing that from the average, he judged that the more correct figure would be an average of ten months. I personally would like to hear what Dr. Councilman has to say in regard to the survival period in his own cases.

"There is one tumor that we do not frequently see. It usually goes to the eye clinic. This is the glioma of the retina. There are two conditions in which it presents itself, one being by far the more common form, in which the tumor starting from the retinal layer (usually the granular layer) will extend into the eye, fill the orbit and very often protrude.

"The second condition is where the tumor originates in the retina and extends by continuity backward through the optic nerve. The same impression is given of this characteristic as in other locations.

"The other condition which we do not see quite so often presents a life history which is rather interesting and is divided into four stages:

"First, the quiescent stage, in which there are practically no symptoms

(as it is with gliomata of the brain). The growth appears on the retina as a faint yellow spot, which at first is only discovered because of a slight obscuring of the vision of the child. It always occurs in children and usually before the fifth year. In all probability, it originates in fetal life. One case was found in a child of twelve years. But in the beginning these tumors are not discoverable except through the ophthalmoscope. Later on they may become large enough to show a faint light yellowish reflex by transillumination, and as they grow larger and larger they either protrude into the eyeball, or lift up the retina, growing behind it and pushing it forward. As they become larger they are more painful and glaucoma may develop. This is the painful stage and there is irritation and inflammation of the eyeball.

"Then we come to the ectatic stage, in which the tumor still increases in size and finally perforates, then growing externally to the orbit.

"Following this comes the metastatic stage, in which the submaxillary and carotid glands are involved, or else in this stage it grows backward into the optic nerve.

"The only hope for these tumors is an early operation, in which it is necessary to remove as much of the optic nerve as possible. That is the sole chance for cure and if there is an undoubted glioma of one eye the ophthalmologist should be on the lookout for trouble in the other eye also, and the ophthalmoscope is the only means by which it can be determined at first.

"These cases, unless there is extension through the optic nerve, do not come to the neurologist's attention, but they are interesting from the nature of the history presented."

DR. W. T. COUNCILMAN, of Harvard University, in discussion, said:—"There is only one word which I might say and that is with regard to the suddenness with which the symptoms of glioma may appear. Dr. Strauss spoke of that. I remember very well when I was working in Conheim's laboratory in Leipsic, in 1881, Dr. Huber, who was then assistant, was called upon to do a medico-legal autopsy of the following character:

"A child had been vaccinated against the will of the parents. There was smallpox in Leipsic at that time and compulsory vaccination was carried out.

"Following the vaccination the child had symptoms of an obscure character. No clinical diagnosis was made but the same symptoms now would have been properly interpreted. The child died in ten days from the time it was vaccinated, and the father sued the authorities. A medico-legal autopsy was performed and it was found that the acuteness of the symptoms in the case were coincident with a hemorrhage arising in a glioma.

"Now with regard to the surgery of these cases: It does not seem to me that it is so absolutely hopeless. A certain number of these cases have gone out of the hospital with their symptoms removed, have gone back to their occupations and have remained well for periods of varying duration. I think Dr. Cushing has records of cures, among them cases in which cysts have been opened and which have not re-appeared. In one such case the wall of the cyst was composed of closely-matted glio fibrils with very few nuclei associated with the fibrils.

"Certainly by operations the most distressing symptoms of these are removed. The patients very often have their vision restored, their whole condition is very greatly ameliorated and if, as sometimes happens in the very severe cases life may be shortened by the operation, this, in view of the distressing symptoms, is not greatly to be deplored.

"As regards permanent cure rather less can be accomplished than in most surgical operations, but in many cases surgical procedures must be undertaken for relief.

"With regard to the circumscribed glioma: Unless the case of the cyst which I have mentioned could be regarded as a circumscribed glioma, I have never seen a circumscribed glioma. Of course, they may occur. Dr. Cushing has seen them and removed them with perfect results, but from the nature of the tumor, it is difficult to understand their formation. In the case of the cyst mentioned there was no formative activity in the few cells present, and the cyst wall seemed to represent something like the cyst wall of an echinococcus. It seemed to be almost as a foreign body in the tissue. An almost similar condition was found in one of the cases of cyst of the cerebellum in which the greater part of the cyst was composed of dense fibrillar glio. One of the things about all these tumors which interests me greatly is the fluid that they contain and the fluid that the brain contains. I am inclined to regard the whole thing as one; to regard the fluid as an essential constituent

of the tissue. Of course, the question of the fibrils comes up here in gliomas exactly the same as in connective tissue fibers. I cannot avoid the conclusion that fibrils may be formed in a substance capable of forming them very much in the same way that fibrin is formed in a fluid which is capable of forming fibrin. Certainly we do see masses of fibrils formed without any cellular or nuclear connections."

TRANSACTIONS OF THE BROOKLYN SURGICAL SOCIETY.

Regular Meeting held Thursday, April 2, 1914.

The President, DR. RUSSELL S. FOWLER, in the Chair.

Program.

Report of Cases:

1. Congenital Absence of Ascending Colon. G. I. Miller, M.D.
2. (a) Old Dislocation of the Shoulder Reduced by Manipulation. Patient. Radiograph.
(b) Hypertrophy of the Prostate (two cases). Patient.
(c) Angulation of the Ascending Colon. F. C. Paffard, M.D.
3. Acute Intestinal Obstruction, due to Cancer of the Hepatic Flexure, simulating Acute Appendicitis. John Linder, M.D.

Paper of the Evening: "Diverticulitis of the Colon: with special reference to Acute Perforation." R. W. Westbrook, M.D.

Old Dislocation of the Shoulder Reduced by Manipulation. Radiograph. Patient.

By F. C. Paffard, M.D.

The first case is that of a man forty years of age who came into St. Peter's Hospital on the 26th of June, 1913, with a history of having injured his shoulder eight weeks before. He had a subcoracoid dislocation which had existed for eight weeks. At that time he was very alcoholic and as his nutrition had also suffered a good deal it did not seem as if it was a very favorable case for an open operation. Having read T. Turner Thomas' article in the *Annals of Surgery*, April, 1913, it seemed to be a suitable case to try, and after considerable difficulty we managed to get the thing back.

His result is not perfect, but still I think that he has done about as well, if not a little better, than most of these cases do after the open operation is done.

You, no doubt, are familiar with this method. It is simply a sort of modification of the old Sir Astley Cooper method of the heel in the axilla, only that you do not put the heel in the axilla. You put the patient on the floor, under ether, and then the operator sits on the floor alongside of the patient, with one foot against the outer border of the scapula and the other foot on the superior border and make strong traction outward, slightly downward, then the assistant presses the head by main force up and in and back into place. It is a procedure that took quite a little strength; in fact, we felt after we had gotten through as if we had been working quite a little.

Hypertrophy of the Prostate. Patient.

By F. C. Paffard, M.D.

The second case, one of hypertrophy of the prostate, is this man sitting here, who is 76 years of age. For one year he had had frequent micturition and then almost complete retention with some bleeding. He was admitted to St. Peter's Hospital in July last year with almost complete retention. The bladder was up to the umbilicus and he was in a very uncomfortable condition. There was a large prostate to be felt by rectum. We had a good deal of difficulty in introducing any instrument at all, but finally we succeeded in getting one in and were able to evacuate the urine slowly. We kept in an indwelling catheter for a few days and then went ahead and did a suprapubic operation in one step, contrary to the way Dr. Sherwood spoke of doing his cases at the last meeting, and his recovery was uninterrupted and he is in pretty good shape now.

The third case is another one of hypertrophy of the prostate (I tried to get him here tonight, but could not), also seventy-six years of age, who had very much the same sort of symptoms (the usual symptoms), and I think

that it was on the 5th of January of this year that he came into the hospital also with a large dilated bladder up to the umbilicus. We used an indwelling catheter with him for a week, supplemented by a few bladder washings, and removed a very large prostate from him suprapubically and his recovery was uninterrupted.

Our experience, while not as extensive as Dr. Sherwood's, has not been such as to make us feel that the necessity of doing the operation in two steps is necessary; in fact, with an indwelling catheter and bladder washings I cannot see, personally, any use in making two steps of the operation. It seems to me if you wait for a week or so and then open up the wound again you have either got a rather nasty, sloughing wound of the abdominal wall to add to your troubles, or else you have a wound that's pretty nearly healed and you may have to open it up again. It seems to me that the bladder can be just as well drained with an indwelling catheter and bladder washings as it can by a suprapubic opening and, again, in these old men I think the sooner you get them up and about the better.

Angulation of the Ascending Colon.

By F. C. Paffard, M.D.

The fourth case is that of a woman forty-three years of age, the mother of five children. Nine years ago she was operated on for a ruptured ectopic by Dr. Baldwin. She was pretty sick and at that time she had a good deal of free blood in her abdomen, and while the wound healed up promptly, she didn't seem to pick up afterwards, but complained of a considerable amount of abdominal pain and while she had always been constipated before, she was very much more constipated after the laparotomy. Ever since then she has complained of increasing abdominal discomfort and pain and excessive constipation. Two years ago she had the symptoms of a gastric ulcer, which was somewhat relieved by alkalies and rest. At that time she refused operation, but the loss of flesh and strength persisted and finally she consented to an operation on the 5th of February of this year. At that time we were a little bit in doubt from her rather extreme emaciation and from the feel of her abdomen that we weren't dealing with a malignant condition, but through the right rectus incision we could find the scar of an old ulcer just at the pylorus, apparently healed. The hepatic flexure was apparently bound down to something or other and on investigation we found that the omentum was strongly adherent to the old laparotomy scar. It was quite a low median laparotomy scar. We found that the ascending colon was angulated; that is, the hepatic flexure was firmly adherent to the cecum, so much so that it required a little sharp dissection to cut the hepatic flexure from the cecum. This raw surface was then whipped over with sutures (I should have said that the appendix had been removed at the previous operation) and the patient returned to bed. Her condition was not very good at the time and it seemed as if it was a wise thing to stop before we had taken too long to do this. She had a rather stormy time for a few days; there was a good deal of distention and a good deal of vomiting, as these cases, I think, are apt to have. Then we put her on paraffin oil and her bowels began to move and she did better. She tells me now (or course, it is too early to tell what the ultimate outcome of the thing will be, but, nevertheless, that was done hardly two months ago) that she is feeling very well indeed, and I don't know just how long this improvement will continue, but if it does not, if the thing recurs, I suppose we will have to do something in the way of an excision of the angulated gut. It is the first time in my experience that I have seen such an angulation of the ascending colon.

Acute Intestinal Obstruction, Due to Cancer of the Hepatic Flexure, Simulating Acute Appendicitis.

By John Linder, M.D.

Sam Charles, age 31, Russian, iron worker. Admitted October 25, 1913.

Present History.—On Friday, October 24th, 1913, at 11 P. M., patient was suddenly taken ill with severe abdominal cramps, vomited several times during the night, vomitus at first that of gastric contents, later becoming bilious, cramps being very severe, persisted throughout the night. The following morning pain had localized to the right side of the abdomen, right-sided pain very severe. Bowels were constipated. No urinary disturbances.

For the past four weeks patient had been complaining of occasional cramps in his epigastric region. These attacks were moderately severe. Never vomited before onset of present attack.

Past History.—No history of surgical interferences, no infectious diseases. During the past four years patient had been complaining of occasional attacks of pain in the right side. Has always been constipated. Patient has not lost weight. Always considered himself a well man, except for the presence of a small inguinal hernia.

Venereal Diseases.—Negative.

Family History.—Negative.

Physical Examination.—Head, neck, heart, lungs negative.

Abdomen.—Moderately distended, right rectus rigid and abdominal sensitive. Temperature on admission, 100; pulse, 80; respirations, 20. Blood count on admission, W. B. C. 15,000; poly., 89 per cent, and lymph., 11 per cent.

Operation.—Right intramuscular incision, peritoneum opened, thereupon a considerable quantity of sero-sanguineous fluid escaped. On examination the cecum was found enormously distended, on the anterior surface of which there was an impending perforation. The serous and muscular coats were ruptured. The abdomen was then explored through this incision and we found the cecum and ascending colon were greatly distended and at its highest point, the hepatic flexure, there was found a tumor, about the size of a lemon, apparently producing the obstruction. The cecum at the point of impending perforation was tacked to the anterior parietal peritoneum and a cecostomy performed, introducing a good sized catheter and inverting with several purse string sutures of linen. One strip of iodoform gauze was placed around the wound edges and the catheter connected with a subaqueous drain.

The following day the temperature rose to 103; pulse, 100; respiration, 35. Patient comfortable, subsequent course quite uneventful. Patient improving in strength, fecal fistula discharging profusely, requiring frequent dressing.

Wassermann Examination.—Negative.

On December 10, 1913, six weeks after primary operation, a second operation was decided upon for radical resection of this growth. Operators, Drs. William and John Linder.

Abdomen cleansed with benzine and iodine, cecostomy sinus closed with collodion. Right rectus incision five inches in length, mid-point being the umbilicus; peritoneal cavity opened, tumor at the hepatic flexure inspected and palpated and found adherent to the lateral parietal peritoneum, the tumor encroaching seriously upon the lumen of the gut.

The ileum was first severed from the cecum about three inches from the ileo-cæcal junction. Both stumps crushed, ligated, carbolyzed and inverted. The transverse colon severed at its mid-portion, the distal end ligated, cauterized and inverted. Proximal end ligated and cauterized. The next procedure was to perform an ileo-sigmoidostomy—a lateral anastomosis by suture method.

The next procedure was to ligate the mesentery of all portion of gut to be removed. The technique up to this point was uneventful, with the exception that while removing that portion of the cecum which was utilized as a cecostomy opening and which was adherent to the abdominal wall, some soiling occurred. This was overcome by shortening the peritoneal cavity and excluding that portion of the abdominal cavity which was soiled and utilizing the fistula tract for retro-peritoneal drainage.

The right rectus incision closed without drainage. Operative time began 10.55 and concluded 12.40. Anesthesia, gas, ether intra-pharyngeal by Dr. Kruskal.

Convalescence.—First day post-operative, temperature, 103; pulse, 140; respirations, 30. On the third day temperature, 100; pulse, 80 to 90; respirations, 20. Post-operative complication, gastric distention, relieved by frequent lavage. Wound superficially infected. Fecal current re-established. Discharged January 8, 1914, ten weeks after admission to the hospital. Histological report by Dr. S. R. Blatteis. Intestinal wall at the side of growth much thickened, due to hypertrophy of muscularis. Mucosa ulcerated.

The glandular tumor tissue extends through the submucosa into the muscularis. The muscle fibres not only hypertrophied, but separated by connective tissue, in which groups of tumor cells are found. A marked secondary suppurative inflammation is present, resulting in numerous miliary abscesses scattered throughout all coats.

Diagnosis.—Adeno-carcinoma, secondary miliary abscesses.

The purpose of the writer in reporting this case is to lay stress on the importance of eliciting a careful history and suspecting this condition when a patient presents with some bowel irregularity, frequent attacks of intestinal cramps and progressive loss in weight. Ofttimes these symptoms are so insidious that patient and physician carelessly pass them by until the condition culminates in an acute intestinal obstruction, as the case here reported.

In the treatment of these cases the writer is of the opinion that the two-stage operative procedure is best borne by these patients, first relieving the intestinal obstruction, and secondly removing the growth when the patient's condition is better able to tolerate a major surgical procedure.

At the present writing a female patient, aged forty, was admitted to the general service of The Jewish Hospital of Brooklyn, with a diagnosis of acute appendicitis. No obstructive symptoms elicited from the patient. Right rectus incision made, appendix found quite normal. Abdominal exploration revealed a tumor at the hepatic flexure of the colon. In this case an ileo-sigmoidostomy was decided upon and a resection of growth at some subsequent date.

Acute Intestinal Obstruction, Due to Cancer of the Hepatic Flexure, Simulating Acute Appendicitis.

By John Linder, M.D.

DR. WILLIAM LINDER, in opening the discussion, said:—"The first case Dr. John reported illustrates a very important class of cases, those of acute intestinal obstruction due to cancer, and the method of procedure is a very important one.

"In running over the literature I find that Rutter, of Berlin, reports fifteen cases of primary resections in the presence of ileus and he has 15 per cent mortality. Korte, of Berlin, in his last report on carcinoma of the colon and large intestines lays particular stress on the point that patients with carcinoma (neoplasm) with obstructive symptoms are in no condition to stand a radical procedure and that we should content ourselves with doing an operation merely to relieve the obstruction and doing a resection later on.

"The suturing or anastomosing of the large intestines is a much more difficult procedure than an anastomosis of the small intestines due to the anatomical structures, and frequently end to end suture and even lateral anastomosis is interfered with by fecal impaction.

"It is interesting to read of the fact (and I have had the same experience), that even when a colostomy is performed, a temporary colostomy, and irrigation of the bowel after a preparation of those cases for subsequent operation where weeks have passed, one finds on opening the abdomen that the colon is still filled partially or even sometimes completely, with fecal contents, and the great danger, no matter whether you do an end to end or side to side anastomosis, is still that a fecal impaction will obstruct the operation and the suture will give. In one particular case where washing had been done with the purpose of cleansing the abdomen and palpation revealed nothing, it was astonishing to find the transverse colon sagged in the pelvis and we had to resect the entire transverse colon to get rid of this fecal matter in order to feel sure that the anastomosis would not be interfered with.

"In the second class of cases where we find a carcinoma and the intestine is not distended and we find no fecal impaction, the procedure which Dr. John followed is much the better one because it makes it much easier at the second operation, and that is just a short-circuiting operation, an ileo-sigmoidostomy, and at the second operation all that you have to do is to remove the growth.

"In operating on the first case which Dr. John reported the technic which I followed out, I think, is interesting, that after ligating the ileum and transverse colon and turning in both ends as cleanly as possible and then immediately doing an ileosigmoidostomy, as we did, if the patient goes bad at any time we can stop and we have preserved the contiguity of the canal, and then by bringing the two loops out of the abdominal cavity ileum on one side and the transverse colon on the other side, practically hanging out of the abdominal wound, all that we did was first to release the attachment or detach the mesentery from the growth, following the course of the vessels to include all of our lymphatics, and the only soiling we had was that due to the presence of fluid when I dissected the colon off from the abdominal wound, and this was overcome by taking the inner blade of the mesentery, sewing it to the edge of the abdominal wall and leaving a space in the retro-peritoneum, which was

drained through the colostomy wound. The patient did not show any peritoneal infection. We just had a superficial wound infection.

"It is interesting to note the possibility of overlooking a second carcinoma. We might find a carcinoma of the hepatic flexure and you are performing a resection and might overlook a similar growth further down. In several autopsies performed in Vienna they found in two or three cases, I think, a secondary carcinoma of the same nature, possibly in the splenic flexure, so it is very important to entirely inspect the abdomen. Another important point in carcinoma is to inspect the liver to see if there is any secondary metastasis."

DR. WILLIAM B. BRINSMADE, in discussion, said:—"Two months ago last Monday I operated on a man for relapsing appendicitis and found an appendix considerably enlarged and congested. At that operation I recall very well and the notes show, that the gall bladder was inspected as well as the pylorus and they were found to be normal. On the fifth day of his convalescence he had great abdominal pain which seemed to us might be due to a band of adhesions. It was, however, overcome by a dose of castor oil. He made a normal convalescence after that and was discharged in ten or twelve days. He was well for three weeks, when he was seized with abdominal pain at the left of the navel, the same place at which he had the pain when he was in the hospital. He had a rigor and the temperature went to 103. The family physician was taking care of him at the time and after it disappeared he sent him to see me and we both recognized a tumor at the left of the navel. We had an X-ray picture taken; in fact, two pictures were made. Dr. Eastmond, who took the pictures, was unwilling to make a diagnosis the first time, because he said there was so much spasm of the large intestine that he could not tell whether there was a growth there or not. At his suggestion, the patient was given rather large doses of belladonna. The spasm quieted and two weeks later another picture was taken and the diagnosis of a malignant growth of the transverse colon was made. During all this time he had no obstruction.

"Last Monday I opened him up and found a tumor of the transverse colon six inches across attached to the left part of the greater curvature of the stomach and involving the splenic flexure.

"The man has not been well and I am afraid that I am going to lose him. I did an anastomosis as best I could. The ascending colon was attached to the upper part of the sigmoid and it was done there because I had the greatest difficulty in lifting out the splenic flexure and because he commenced to do badly after an hour and fifteen minutes of operation. His occupation in life is such (he is a butler) that I didn't think it was indicated to do any thing for him in the way of giving him an artificial anus. We found large peritoneal glands after we had removed the tumor.

"This is of great interest to me because he had been seen by one of the best of our general practitioners and a diagnosis of chronic appendicitis with relapsing attacks had been made and the diagnosis was justified.

"An interesting feature of this case is that this tumor, which was six inches long and three or four inches broad, and so closely attached to the stomach that we could separate it only with the greatest difficulty, could not be felt two months earlier by a hand in the abdomen which was feeling for just such a condition. One hesitates to say that it has grown to that size in two months, but the indications are very clear that it has multiplied in size very rapidly in two months."

NOTE.—The patient has improved and is now on the road to recovery.

DR. MATHIAS FIGUEIRA, in discussion, said:—"A diagnosis of appendicitis is often made in these cases, but I think that if we bear in mind the fact that these forms of disease take place in the old, we many times will be saved the mistake of making a diagnosis of appendicitis in cases of cancer. I remember very well a case not long ago of a man seventy-two years of age with pain in the right iliac fossa and distention, and a diagnosis of appendicitis. I said at the time that I did not believe he had appendicitis, but that there might be some other condition back of it that was simulating appendicitis and that this would show when the operation was performed. This man had a ruptured gall bladder, with the results of it, and I have seen other cases in which the symptoms of appendicitis seemed to be marked, yet the age of the patient and the general condition and the loss of flesh would leave one in doubt as to the presence of appendicitis."

DR. H. BEECKMAN DELATOUR, in discussion, said:—"I do not think that we can rely on the age of these cases so much because many of them occur in people of fifty or under. I recall a number of cases. I am not speaking of carcinoma of the colon particularly being mistaken for appendicitis, but

carcinoma in the colon itself, either the transverse or ascending or descending colon, because frequently, I think, in my experience, it has occurred in people below fifty, and it is really remarkable if you examine the specimens removed in these cases, to see how long they will go without giving symptoms when the canal is so reduced. It seems almost impossible that any fecal matter could get through. I recall three or four cases in which the symptoms came on as acute intestinal obstruction and the intestinal canal was reduced so that it was impossible to get even a lead pencil through.

"I think that if we go carefully into the history we get a story of constipation and loss of flesh and some intestinal difficulties. However, the most of the cases that I have seen have given symptoms of acute intestinal obstruction rather than appendicitis and whether the obstruction was due to malignant disease or not, was the difficult thing to decide, but I do not recall a single case in which the symptoms were acute enough and localized enough to warrant the diagnosis of appendicitis.

"I agree thoroughly with the previous speakers in the suggestion of creating drainage of the intestinal canal before making an attempt to do anything radical or even an anastomosis in these cases of obstruction."

DR. JOHN LINDER, in closing the discussion, said:—"I have nothing further to add except to say that when this young man, thirty-one years of age, came in that night he looked the picture of a perforated appendicitis. He gave a typical history of having had the generalized abdominal pain and secondary localization. He had a very tender abdomen, a very rigid right rectus and while we did not elicit a history of bowel irregularity prior to the operation, we got this subsequent to the operation. He looked very much like an acute perforative appendicitis with secondary intestinal paresis; the presence of carcinoma causing intestinal obstruction was the last possibility thought of."

Hypertrophy of the Prostate (Two Cases). Patient.

By F. C. Paffard, M.D.

DR. MATHIAS FIGUEIRA, in discussion, said:—"In regard to the operation for prostatectomy in two stages or in one stage: I think that both operations have their field and their indications. In some cases the operation that the doctor performed is the proper one, but there are cases in which the two-stage operation is strongly indicated.

"I remember the case of an old man who was suffering with a very profuse and chronic cystitis and with a great deal of sandy deposit. In that case it was impossible to clean or wash through a catheter with a large middle lobe in the way. A suprapubic opening and cleaning and draining of the bladder in that way was the only possible means to clear out things and to control the cystitis and enable the surgeon to perform an operation with success.

"Then, again, in other cases of very chronic cystitis with profuse inflammation, a sacculated bladder and with probably more or less ascending infection involving the kidneys and possibly pyelitis, I think, the two-stage operation is the operation and is a life-saving operation. Then again, there are cases of irritable urethra, which probably all of us have met with and in which it is not possible to keep a catheter in the bladder, and, again, there are other cases in which these patients, at night, won't keep the catheter in, but will pull it out. In such cases the two-stage is the operation indicated, and many times is the means of saving life."

Paper of the Evening: "Diverticulitis of the Colon, with Special Reference to Acute Perforation."

By R. W. Westbrook, M.D.

(For original paper see page 414.)

DR. MATHIAS FIGUEIRA, in opening the discussion, said:—"It would be too bad, indeed, if a paper of the importance of this one, which is so complete and so thorough, were to pass without discussion and without something being said in regard to it.

"The doctor has gone into the symptoms and the treatment of the disease and the different phases of it very completely indeed, and there isn't much for me to say. I will say this, however, to the practical surgeon the most important part of the subject is the importance of keeping constantly in mind the symptoms and possibilities of the disease in its various forms in mind. Unless you do keep that in mind the chronic cases especially (and these cases are sometimes very chronic and last a long time and assume very peculiar phases), you are apt to fall in error. Some of them will perforate into the

bladder and one of the characteristics and more marked symptoms will be a purulent discharge from the urethra. Others will, in the course of time, as the doctor pointed out, develop symptoms similar to cancer and many of them are operated upon and treated for cancer. Dr. Herdeman, in an article recently published speaks of one of his cases in which the diagnosis was not made until eventually it went to the Mayos and a diagnosis was made there. The case got back to the doctor and it was an instruction to him and he says that ever since lesions on the left side of the abdomen, especially if they involve the sigmoid, have put him on the lookout. This is the point that I want to make, that with any lesions of the left side, any chronic lesions, obscure lesions, inflammatory lesions, the idea of diverticulitis should always be in our mind and if that is done it will often bring light and lead us in the right path for a correct diagnosis."

DR. H. BEECKMAN DELATOUR, in discussion, said:—"This is certainly a very instructive paper and a condition that we must thank the doctor for bringing so distinctly before us.

"I cannot say much in the discussion of it as he has covered all there is to say along the general lines. I would simply like to add one case that came under my personal care in a lady about fifty years of age, who was admitted for an acute cholecystitis. Operation revealed a partially gangrenous gall bladder filled with stones and pus. She had a temperature of 104 when she came to the hospital, and after the operation on the gall bladder everything went along nicely. The temperature promptly came down, but suddenly, at the end of the first week, she began to suffer with pains in the lower abdomen, particularly in the neighborhood of the sigmoid, with frequent desire for stool, passing very small quantities of mucus with very little fecal matter in it. The temperature began to rise again and went up to 102 or 103, and I think that there were some chills (I'm not sure of that, however), but the most prominent symptoms were the severe pain and the frequent desire for stool. It was very obscure and it was not until about the third or fourth day of the attack that we were able to locate just where the trouble was; then, on pelvic examination, we found a mass posterior to the uterus and by bimanual examination we could feel this mass extending well up about the pubis. It had all the appearances of an ordinary pelvic abscess, and that is what I supposed we had to deal with. I made a posterior section and found that I was getting into tissue that did not have the appearances that we are accustomed to find in a pelvic abscess, but rather those of a carcinoma of the intestinal wall. I then made a lower abdominal incision, and in getting into the pelvis we found that we had a perforation from one of these pouches from the upper end of the rectum. There was a cavity containing about three ounces of pus with a great deal of thickening about it. This was cleared out and drainage instituted. The wound promptly closed down to a fistula which discharged, occasionally, a little feces, but frequently gas, and the injection of bismuth into this sinus was followed by the evacuation of bismuth from the rectum, so that we had a direct communication through this sinus from the abdominal wall to the rectum. Finally, under bismuth injections the sinus healed.

"This case was operated in December a year ago and was presented before the Clinical Surgical Society at the meeting a year ago this January. I think that the president will recall seeing the case. The sinus finally healed in June. I saw her about a week ago and the sinus is now thoroughly healed and a small ventral hernia exists at the site of drainage.

"This was evidently a case of acute diverticulitis with gangrene and rupture, producing the abscess in the left pelvis which complicated an acute condition existing in the gall bladder."

DR. WILLIAM LINDER, in discussion, said:—"I wish to report a case that I had in a female as I was called in to see the case one day while in the operating room. One of the surgeons attempted an operation, supposedly for some pelvic trouble (some pelvic tumor), and found dense adhesions between the sigmoid and uterus. In taking out the adhesions he tore the gut across and at about that stage I was asked to come in. The first impression I got, as Dr. Westbrook stated, was that we had to deal here with a low carcinoma and there was some difficulty in wrapping the proximal portion of the gut in sterile towels, and I proceeded to look for the other end. It took ten or fifteen minutes to find the distal portion of the gut. The gut was torn across with the growth in which it was retroverted, supposedly as a pelvic tumor, and I found that the gut was torn off right opposite the promontory and there was no mobility of that part of the pelvic colon which is not covered with peritoneum. I entirely recovered that peritoneum. Then I pro-

ceeded to examine for carcinoma and in doing so, in putting my gloved finger into the lumen of the intestine, I found no erosion in the anterior mucosa. It was evidently smooth, but I had difficulty in releasing it from above in the abdomen and upon that I ventured a probable diagnosis of an inflammatory condition rather than malignancy, and changing my gloves and gown, and cleaning the peritoneal cavity as best I could, I resected the growth and, passing a rectal tube up within the abdomen out to the rectum, performed a direct anastomosis between the sigmoid and pelvic colon. The suture lines were reinforced with omental grafts and drainage was left in, going to the suture line. The patient made an uninterrupted recovery. Fortunately or surprisingly, we didn't have any peritoneal infection, which we ought to have had because of the soiling. The fistula persisted for about three weeks and she made an uninterrupted recovery.

"My diagnosis was that type which Dr. Westbrook reported, of a very severe pericolicitis, peridiverticulitis, and there was no inflammation of the mucous membrane and I readily believe that that point in itself, while it appeared on gross inspection to be carcinoma, led me to believe it was an inflammatory condition and I proceeded with a resection. She made an uninterrupted recovery and has been well ever since. That was about a year and a half ago."

DR. PAUL M. PILCHER, in discussion said:—"The case of ours which Dr. Westbrook referred to was not the type of man that he has had to deal with in his cases of diverticulitis. He was a thin man, and was a total abstainer. When the abdomen was opened there was found a most involved sigmoid, an infiltrated abdominal wall overlying the sigmoid and also the vault of the bladder. The operation was undertaken, supposing that the mass was a carcinoma, and the Micklowitz three-stage operation was done in this case. This consisted in, first, freeing the mass, resecting a portion of the abdominal wall, which was attached to the tumor, and then resecting the mesentery, which supplied the intestine containing this growth. The base of the resection was about eight inches, going down to the root of the mesentery, removing the glands *en masse* and suturing the mesentery together and drawing the mass outside of the abdomen. No attempt was made to open the gut at this time. After forty-eight hours the mass was cut off with cautery under local anesthesia. The third operation was done four weeks later, and an anastomosis made between the descending colon and rectum.

"The man recovered and is in good health today, one year after the operation.

"When the specimen was examined it was found to consist of three diverticula. Two of these diverticula were grossly carcinomatous. The third was inflammatory, but there were no carcinomatous changes. I wish to state, however, that there was no microscopical section made of those two diverticula, which were supposed to be carcinomatous, so they may not be malignant. However, we will make sections of them inasmuch as we have the specimen still.

"I feel that the important thing brought out by this paper is that you have to treat the tumor whatever it may be, inflammatory or malignant, just the same as a malignant growth of the colon. You must excise it completely and to do that, if the patient is in a state of emaciation, as many of these cases are, you have got to do it thoroughly by the three-stage operation. In the acute stage cases there is nothing left to do but drain the colon. The cases of Meckel's diverticulum, of which I have seen three, do not, as a rule, call for operation.

"This case which the doctor has presented tonight seems to be atypical. It does not seem to me to represent the usual type that we meet with. I think that that type must be acquired and must be due to some disease of the bowel wall preceding the emaciation which has caused these diverticula."

DR. RUSSELL S. FOWLER, in discussion, said:—"I have seen two cases of diverticulitis of the sigmoid, both of them acute.

"These two cases could have been diagnosed as left-sided appendicitis, but the abscess or thickening being to the outer side of the sigmoid, led me to make a diagnosis of acute diverticulitis. Both cases recovered. The last, a corpulent man of middle life, was operated on about a year ago. He gave this history:

"About three or four days before my visit he had eaten a large meal of salmon and had indigestion from this; that his vomiting and indigestion had continued and had been accompanied with general abdominal cramps; that these cramps had centered in the left side. On examination there could be made out a swelling to the outer side of the sigmoid. The temperature was

high. He was admitted to the German Hospital and an abscess was opened. No attempt was made to remove the diverticulum on account of the amount of pus and infection present. He developed a small fecal fistula which closed in a few months. Subsequently he had another attack of acute diverticulitis. At that time I was able to take out the diverticulum and demonstrated it with an enterolith in place and also demonstrated a perforation of the base which communicated with the sigmoid. He healed up and made an uneventful recovery from this second operation. A few weeks ago he again developed acute diverticulitis and this time I found an abscess and removed two diverticula, one inflamed without perforation and the other perforated, both of which could be demonstrated, and both containing a small enterolith. Examination of the remainder of the sigmoid did not disclose any more areas of inflammation except at the two places where the diverticula had been removed."

DR. R. W. WESTBROOK, in closing the discussion, said:—"I have nothing to add except to say that I have been very much interested in Dr. Delatour's case and I think that the point Dr. Linder makes is a good one as a rough method of determining whether one is dealing with cancer or with diverticulitis. The mucosa in the second case, that of the man who had had an obstructive condition, was quite smooth and it was practically impossible to determine any orifices in the diverticula; and often where inflammation has supervened and ulceration, the entrances are closed from the lumen side of the intestine.

"In regard to Dr. Pilcher's suggestion that this was a rather atypical case (the first case presented), that is so except that there are one or two cases similar to it reported in the literature, one that Treves reports. Where the number of diverticula was very large, I think, running up into the hundreds. I should think that it would be an interesting thing for Dr. Pilcher to go over his case which presented these diverticula and which was diagnosed as carcinoma, to determine positively whether it be carcinoma or not.

"Those photographs of Wilson's which I have put on the table, show one or two cases which may be similar to the one you mention. One is not an acquired diverticulum, but a true diverticulum of all the coats very much thickened, shut off from the bowel side, from the mucous side and also having quite a dense mass of tissue shown around the mucous side of the bowel. That would look very much like carcinoma. Possibly it may be similar to your case."

TRANSACTIONS OF THE BROOKLYN SURGICAL SOCIETY.

Regular Meeting, May 7, 1914.

The President, DR. RUSSELL S. FOWLER, in the Chair.

Program.

Case Reports:

1. Diverticulitis of the Sigmoid. Obstruction of the Bowel. Presentation of Patient one year after operation. P. M. Pilcher, M.D.
2. (a) Further History of a Case of Cholelithiasis and Gastric Ulcer. Patient.
(b) Angulation of the Sigmoid. X-ray. Patient.
(c) Cysts of the Parietal Peritoneum. Two cases. Roger Durham, M.D.
3. (a) Scissors-legs in an Adult due to Osteo-arthritis of the Hip.
(b) Marked Apparent Shortening of the Leg due to Osteitis following Fracture of the Neck of the Femur.
(c) Marked Sacro-iliac Relaxation. X-ray. B. B. Mosher, M.D.

Paper: "Acute Pancreatitis." William Linder, M.D.

Diverticulitis of the Sigmoid. Obstruction of the Bowel. Presentation of Patient One Year After Operation.

Paul M. Pilcher, M.D.

This patient was operated on March 26, 1913.

The patient, a lean, active man, showed considerable cachexia. He had always been in good health until July, 1912, when he began to suffer from frequent prolonged attacks of hypogastric colic. He had no vomiting. He was constipated. He had relief from pain when the bowels moved. He lost 35 pounds in weight. He had been under the care of a number of physicians for two

months without improvement. Cathartics bring about a movement of the bowels. His appetite is good.

Examination was negative except in the left iliac region where there was tenderness on deep pressure and some muscular rigidity. There was indistinct induration overlying the left brim of the pelvis.

The first operation was done on him March 26, 1913, at St. John's Hospital. I would like to show you the final result of the rather extensive abdominal work which was done here. Nearly all of the sigmoid was removed, a fairly large portion of the abdominal wall and a portion of the vault of the bladder. The patient in this case had three operations altogether. He has a strong abdominal wall and I do not believe he has any trouble at all. He is not constipated at all and has not taken any medicine in two months. He has gained 24 pounds, so that he has pretty nearly regained his full weight.

At this point Dr. Pilcher drew a diagram on the blackboard of the operation which was performed in this case, and continued, saying:

An incision to the left of the median line below the umbilicus exposed a large mass involving the sigmoid and adherent to the anterior abdominal wall and to the bladder. The growth was freed from the surrounding structures. There were adhesions to the intestine and a portion of the bladder was removed without opening into its interior, and also a portion of the anterior abdominal wall, to which the growth was attached. The sigmoid and descending colon were mobilized and the sigmoid was raised out of the abdomen. There were large glands found in the mesentery and the first portion of the operation after taking out a section of the abdominal wall and the vault of the bladder, not trying to detach it from the mass, was something like this:

The first portion of the operation consisted of the removal of the mesentery, detaching it from the intestine here and taking out this entire piece of mesentery down to the root, which contained enlarged glands. Then these two leaves of the mesentery were brought together and sutured and taking a section of the intestine, about three inches, on either side of the growth, the intestinal walls were brought together and sutured with two or three sutures so that they would be held together; then the mass was brought outside of the abdomen without being resected. At that time his condition was very bad and he was very weak. That was all that was done at the first operation. Then forty-eight hours later, with the patient in bed, with a cautery and scissors, the intestine was cut off here and here, removing the entire mass. That left a fecal fistula, the intestine being sutured together here, and one arm of the intestine going down here and the other arm coming up in that way. Then a fecal fistula was established, and after he had regained his strength—a month later—this spur was broken down here and an anastomosis made between this point of the intestine and this point, and these two portions of the intestine were brought over and sutured together so that we had a double opening formed here and the continuity was re-established across there. About four or five weeks later there was a fecal fistula established again and nothing was done to close that. He was allowed to go home with quite a considerable leakage, but that gradually ceased.

The reason why this extra opening here was made was because I expected that point to break down and a fecal fistula to be re-established, and I presume that it is this opening which remained and has allowed him to have a continuation of the large intestine.

Now he is presented over a year afterwards with a gain of 24 pounds in weight and perfect health with apparently no constipation.

The reason I present this case is that at the last meeting of the Surgical Society there was a discussion on diverticulitis. This tumor mass, when it was examined, showed that it consisted primarily of three diverticula, one of which was still a diverticulum. The other two diverticula were infiltrated and formed a tumor mass. The pathologist is still doubtful of the nature of the growth. I have had him go over the slides again and he finds besides the ordinary inflammatory infiltration, a round-celled type of tumor, which is very rare in this particular locality.

"Angulation of the Sigmoid."

Roger Durham, M.D.

D. P., aged 55, married, Italian woman, was seen three months ago on admission to the M. E. Hospital, and presented the following history. Chief complaint, bowels had not moved for three days.

Past History.—Three years ago had a similar attack of constipation, left abdominal pain, and a mass in the left iliac region. Eight months ago a similar attack occurred, relieved after the bowels moved. Between these attacks patient

suffers from discomfort and constipation, which latter dated from the primary attack.

Present History.—Two days before admission a sudden sharp pain occurred in the left iliac region, spreading soon over the entire abdomen. This was dull in character and was succeeded by vomiting when any nourishment was taken. Vomitus was not fecal. All attempts to move her bowels had failed.

Examination.—Showed an elderly appearing woman, of fair nourishment, who did not seem critically ill. The abdomen was generally distended, not boardy and fuller on the left side. A mass as large as a child's head could be felt in the left iliac region, tender to touch, and so much so that a careful determination of the nature and limits of the mass was impossible. Attempts to move the bowels by enemata were ineffectual.

Examination Under Anesthetic.—The same mass could be felt by vagina, and seemed to be a distended coil of intestine. During this manipulation a gurgling sound was heard, and the mass disappeared, coincidently with a copious evacuation per rectum.

The patient was sent back to bed, the bowels were thoroughly emptied, and X-ray picture taken of the sigmoid. This revealed an hypertrophied loop of sigmoid about a foot long. This was evidently the cause of the attacks of bowel obstruction, due to the twisting and consequent occlusion of the gut.

At the end of a week the patient was operated upon through a left rectus incision, and the loop of sigmoid—about a foot in all—was excised, and an end to end anastomosis done. A long rectal tube was inserted past the line of anastomosis. The bowels moved on the fourth day, at which time the tube was removed, and several times each day following, without cathartics. There was some wound infection of the superficial layers, and the patient went home at the end of five weeks cured.

(Continued in December.)

Medical Society of the County of Kings

MONTHLY BULLETIN TO MEMBERS

OCTOBER, 1914

MINUTES OF STATED MEETING, OCTOBER 20, 1914.

The President, Dr. J. Richard Kevin, in the chair. The auditorium was insufficient to seat the members present, numbering over five hundred. The meeting was called to order at 8.30 P. M., and the minutes of the previous meeting were read and approved.

Report of Council.

The Council reported favorably upon the following applications for membership:
James L. Armstrong, 45 Hampton Pl.; N. Y. Univ., 1897; proposed by C. D. Kevin; seconded by Memb. Com.; June, 1914.
John B. D'Albora, 83 Clermont Ave.; L. I. C. H., 1912; proposed by J. R. Kevin; seconded by J. C. Kennedy; May, 1914.
Willis M. Gardner, 491 Greene Ave.; L. I. C. H., 1908; proposed by T. E. Clark; seconded by C. D. Kevin; June, 1914.
Robert F. McGinness, 1324 Jefferson Ave.; Baltimore, 1898; proposed by C. D. Kevin; seconded by Memb. Com.; June, 1914.

Patrick J. Murray, 478 Classon Ave.; Bellevue, 1895; proposed by C. D. Kevin; seconded by T. A. McGoldrick; March, 1914.
Ambrose A. Scouler, 755 Macon St.; P. & S., N. Y., 1896; proposed by C. D. Kevin; seconded by Memb. Com.; June, 1914.

Election of Members.

The following, duly proposed and accepted by the Council, were declared elected to active membership:

Edward T. Gibson, 168 Montague St.; P. & S., N. Y., 1877; proposed by E. E. Wilson; seconded by P. C. Jameson; May, 1914.
Richard F. Seidensticker, 129 Lafayette Ave.; Yale, 1911; proposed by E. H. Fiske; seconded by Memb. Com.; April, 1914.
Joseph Zicarelli, 1377 Herkimer St.; L. I. C. H., 1909; proposed by J. H. Andrews; seconded by C. D. Kevin; March, 1914.

Applications for Membership.

Applications for membership were received from the following:

John J. Anderson, 536 Lafayette Ave.; L. I. C. H., 1911; proposed by F. Schroeder; seconded by Memb. Com.; October, 1914.

Chas. Hermance DeLancey, 186 Prospect Pl.; P. & S., N. Y., 1891; proposed by B. Harris; seconded by Memb. Com.; October, 1914.

Stanley B. Doyle, 426 Park Pl.; Bellevue, 1912; proposed by C. D. Kevin; seconded by Memb. Com.; October, 1914.

Onslow A. Gordon, Jr., 71 Halsey St.; L. I. C. H., 1910; proposed by J. R. Kevin; seconded by O. A. Gordon; October, 1914.

Eugene J. Kenney, 219 Prospect Pl.; L. I. C. H., 1889; (For Reinstatement); October, 1914.

Howard T. Langworthy, 301 DeKalb Ave.; P. & S., N. Y., 1911; proposed by R. S. Fowler; seconded by A. H. Bogart; October, 1914.

Morris Mendalis, 840 Halsey St.; L. I. C. H., 1909; proposed by C. D. Kevin; seconded by Memb. Com.; October, 1914.

Ernest L. Schaefer, 801a Willoughby Ave.; L. I. C. H., 1912; proposed by R. S. Fowler; seconded by Memb. Com.; October, 1914.

Clarence B. Vogt, Hancock St. and Lewis Ave.; Syracuse, 1907; proposed by C. D. Kevin; seconded by Memb. Com.; October, 1914.

Richard Chas. Weithas, 813 Halsey St.; Geo. Washington, 1909; proposed by C. D. Kevin; seconded by B. Harris; October, 1914.

Wm. Leon Wolfson, 3003 Clarendon Road; Univ. & Bell., 1910; proposed by S. R. Blatteis; seconded by B. Harris; October, 1914.

For Reinstatement. (Former Members.)

William L. Chapman, 114 Lafayette Ave.; Bellevue, 1893; Memb. Com.

James H. B. Dowd, 4201 Ft. Hamilton Parkway; L. I. C. H., 1900; proposed by J. R. Kevin; second by C. D. Kevin; June, 1914.

For Corresponding Membership.

W. Franklin Wood, Bay Shore, L. I.; N. Y. Hom., 1912; proposed by W. A. Northridge; seconded by C. D. Kevin; May, 1914.

Scientific Program.

1. Paper: "Twilight Sleep: Its Advantages, Its Diagnosis and the Technic."

By John O. Polak, M.D.

Discussed by Ralph M. Beach and Robert L. Dickinson.

2. Paper: "Gastric Ulcer."

By John B. Deaver, M.D., of Philadelphia, Pa.

On motion by Dr. Bion Bogart, a unanimous vote of thanks was tendered Dr. Deaver.

Miscellaneous Business.

The following resolutions were presented by Dr. William J. Cruikshank, as chairman of the Committee on Medical Economics:

WHEREAS, The Workmen's Compensation Act recently became a law, and is now in full force and operation in the State of New York, and

WHEREAS, It has become necessary that the members of the medical profession practicing in this state shall agree upon a schedule of prices to guide them in charging for services rendered under the provisions of the said Workmen's Compensation Act, and

WHEREAS, The Medical Society of the State of New York has formulated such a schedule.

Now, therefore, be it Resolved, That the Medical Society of the County of Kings hereby endorse this action of the State Society, adopting the medical and surgical fee bill thus formulated.

It was moved and carried that these resolutions be adopted.

Dr. William F. Koerner then read the following resolutions:

WHEREAS, Mosquito breeding places exist along Jamaica Bay, Sheepshead Bay, and adjacent swamp lands, and

WHEREAS, In consequence of these breeding places, Brooklyn Borough is yearly infested with the pesty mosquito, thereby endangering the life and happiness of this community,

Therefore, be it Resolved, That the Medical Society of the County of Kings, consisting of 900 physicians of Kings County, do vigorously protest that in this progressive age the mosquito is a blot to the city's vigilance over the health of this community, and

Be it further Resolved, That we request the sum of \$30,000 be appropriated by the Board of Estimate and Apportionment to the Department of Health, for the purpose of abolishing these breeding places;

Be it also Resolved, That copies of these resolutions be sent to the Board of Estimate and Apportionment, the Commissioner of Health, and the President of the Borough of Brooklyn.

Unanimously adopted.

The following resolution, read by Dr. William Lintz, the President of the Brooklyn Pathological Society, was unanimously adopted:

WHEREAS, The progress of medicine depends much upon pathological research, and that in turn more prevalent autopsies increase our knowledge of disease, and

WHEREAS, The general public, not realizing the direct purpose and immense value of such autopsies, which ultimately results in increased general welfare of the community, is prejudiced against such post-mortem examinations,

Therefore, be it Resolved, That through the Medical Society of the County of Kings, every physician in our county be urged to use every effort to induce the public to the end that autopsies become the rule rather than the exception, and that the President and Secretary be empowered to send appropriate letters to the hospitals and to the clergy of this county.

Meeting adjourned at 10.50 P. M.

BURTON HARRIS, Secretary.

LONG ISLAND MEDICAL JOURNAL

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No. 12

GASTRIC ULCER.*

John B. Deaver, M.D.,

Philadelphia, Pa.

GASTRIC ulcer as a subject does not lend itself to dogmatic treatment. Both the investigator and the clinician find in it the most baffling problems. The most certain thing about it is that it is by no means so uncommon as was formerly thought and taught. Its etiology and pathogenesis require much elucidation and many questions as to treatment are far from settled. It is to be hoped that by the focusing of attention, by combined effort and by the exchange of views and experiences we may come to a more thorough understanding of the factors involved in the production and maintenance of the ulcerous state and of the rational means for dealing successfully with it.

Nothing aids therapeutics so much as an understanding of the causes both predisposing and provocative which are responsible for the morbid condition. Such knowledge at once enables us to found our therapy not only upon empirical and symptomatic lines, but to attack at the root, and what is even more important, to apply rational preventive measures. In connection with gastric ulcer, however, we have many ideas, but little that is definitely established, as to the formation and continuance of the ulceration under clinical conditions. Direct traumatism, nervous and vascular conditions aided and abetted by the digestive and erosive action of the gastric juice, particularly when overly acid have been in the past the basis of the most advocated theories of the cause of this peculiar form of ulcer. None of these explanations has stood the test of clinical parallel, though it cannot be said that their influence has been disproved. For some time there has been growing up in the minds of clinicians a strong impression that peptic ulcers are at the outset due to some form of toxemia or infection. The clinical arguments in favor of this view are devious and not in themselves conclusive, but, as has often been the case with such beliefs, evidence of a more satisfactory nature has appeared after a time. Türk succeeded in producing gastric ulcer by the intravenous injection of colon bacilli. Recently Rosenow has shown that certain strains of the streptococcus when inoculated into the blood of experimental animals have the property of producing ulceration of the stomach and duodenum with great uniformity. Just as other strains will show a predilection for the joints, or still others for the endocardium, these organisms work

* Read before the Medical Society of the County of Kings, Brooklyn, N. Y., October 20, 1914.

their chief injury upon the gastric mucosa. Gundermann has produced not only acute ulcer, but also calloused ulcer of the stomach by the ligation of the left hepatic branch of the portal vein. He comes to the conclusion that the causative factor is an hepatic toxemia. Experimental evidence therefore is not lacking as to the role that toxemia, whether metabolic or of bacterial origin, may play in the cause of gastric ulcer. In our clinic we have observed the frequent association of chronic disease of the appendix and gall bladder with duodenal and gastric ulcer, and Paterson has also called attention to this point. Graham in the Mayo statistics, states that coexistent disease of the appendix or gall bladder was noted in 23 per cent of the cases of duodenal ulcer and in twenty per cent of gastric ulcer. The focus of infection need not necessarily be the abdomen, though it seems that it is here that the association is more evident. We are justified in assuming that chronic or acute infections with the toxemia or bacteremia consequent thereon are capable of producing gastric and duodenal ulceration, and that, therefore, the elimination of such food of infection is desirable from this standpoint. So much for prevention as the problem now appears.

We are concerned no less with the factors that keep the ulcer from healing than with those that give rise to it. We may look for these factors in the condition of the general health, in the continuance of the exciting cause of the ulcer, in the muscular activity of the stomach, in the action of the gastric juice upon the eroded surface and in the infection which implants itself upon the bed of the ulcer. That there is a strong natural tendency for simple gastric ulcers to heal there can be no doubt. There is abundant evidence of such healing in the human, and experimental ulcers usually close rapidly.

Well directed medical treatment will succeed in healing most acute ulcers and a fair percentage of those well on their way to chronicity. In the absence of severe complications medical treatment should always be given a fair trial before resorting to surgery.

Ambulatory treatment will rarely be successful except in the simple forms of ulcer. If anything is to be expected of medical treatment in the chronic types of ulcer, it must be radical, demanding from four to eight weeks rest in bed and the most careful feeding designed to promote complete rest of the ulcerated area and protection from the irritating effects of dietetic and other excesses or errors. The natural remission of all symptoms which are characteristic of ulcer of the stomach and duodenum have been productive of much misunderstanding and harm. It must be thoroughly understood that ulcer is productive of symptoms as a rule only when it is in an inflamed and irritated condition. When the bed of an ulcer is covered with insensitive granulation tissue and its margins are not inflamed, pain and distress are abolished and unless adhesions or cicatricial deformity are already present, the patient feels quite well and the incautious may be led to believe that the ulcer has healed, which is far from being the case. It is not difficult to lull an inflamed ulcer into quiescence, but it takes time, patience, care, and coöperation on the part of the patient to bide the time necessary for reinvestment of the ulcer with epithelium.

The explanation of the recurrent attacks extending often over many years is to be found in the fact that at no time was the ulcer healed. In the meantime such ulcers rarely fail to give rise to complications which are of more or less moment in the production of symptoms and in the danger to life. Circumstances render it impos-

sible in many instances for the patient to submit to the rigorous regimen necessary for cure and in many other cases it is equally impossible to secure the coöperation of the patient in the tedious process. Still, attempts at healing by medical treatment with the best means available is justifiable in all except those cases complicated by perforation or recurrent hemorrhages of sufficient moment to cause material drain upon the patient's health. The only absolute indication for operation in gastric ulcer is perforation. Upon that point there can be no difference of opinion.

There still is a difference of opinion among surgeons as to the correct procedure in perforation. Some contend that only the perforation should be closed leaving further treatment of the ulcer to a subsequent sitting. Others believe that a simultaneous gastroenterostomy not only aids the permanent cure, but also increases the chances of recovery from the acute perforative condition. While it might appear on the surface that simple closure of the ulcer would suffice for the immediate emergency and that the less surgery the greater likelihood of recovery, experience has, in my belief, declared that a primary gastroenterostomy is far more likely to be followed by immediate recovery and, certainly, the prospects of future relief are much improved. The mortality of those who combine gastroenterostomy with closure of the ulcer is superior to that of those who practice only closure. I have reported thirty-one cases of gastric and duodenal ulcer in which gastroenterostomy was done as a primary procedure with but one death. Since then I have had one additional case in which the same operation was done followed by prompt recovery. Hemorrhage, massive, recurrent or occult will furnish different indications according to the lesion believed to be present, its duration, and the amount and seriousness of the loss of blood.

Profuse gastric hemorrhage in the young with previous symptoms of ulcer is not uncommonly due to mucous erosions or hemorrhagic gastritis. The cause and pathology of these so-called Dieulafoy's ulcers are not clearly understood, but clinical experience shows that it is an acute condition, not ordinarily fatal, tending to clear up spontaneously and often followed by no sequelæ of any kind. Gastroenterostomy has been advocated for this condition, but the evidence, in my opinion, does not warrant its use in every case. On the other hand, massive hemorrhage from the erosion of a vessel in the base of a chronic ulcer is a very dangerous condition and urgently calls for intervention. At the same time it is not wise to operate upon the patient in an exsanguinated state. The first hemorrhage rarely kills and with proper treatment some reaction may be expected. On the other hand, reaction with the rise of blood pressure is apt to excite a fresh hemorrhage which is more likely to be fatal than the first. It becomes a question of nice surgical judgement, therefore, to decide when to operate. I have regretted my decision in both directions and do not feel able to advise in other than the most general terms. It is too hazardous to wait for the reformation of blood to take the place of that which was lost, as that is a matter of some days or even weeks. This being the case, it seems wise to wait only for the subsidence of shock, the refilling of the blood vessels by the body fluids and water administered and the restoration of the blood pressure to an approximately normal level. Direct transfusion of blood will occasionally have a field here, yet in my experience it has proven of no value.

In these cases one's difficulties are not over with the selection

of the best time for operation. The location of the actual erosion in the vessel is a matter of the greatest difficulty and it is equally difficult to determine which artery is affected. Direct ligation is therefore a theoretically desirable, but, practically, well nigh impossible object. Complete excision of the ulcer is almost invariably too much of an operation for these patients to stand. Simple gastroenterostomy is helpful, but does not provide absolute security against recurrence of the bleeding.

A plan which I have recently followed successfully appeals to me as sufficiently rational. After opening the abdomen and locating the ulcer, the stomach should be opened and the base of the ulcer inspected. If the vessel is seen it may be ligated directly by transfixion. If, as is more commonly the case, no erosion or artery is seen, a stitch of catgut should be whipped around the base as well as the edge of the ulcer with the object of occluding the vessels supplying it. The stomach may then be closed and a gastroenterostomy quickly performed. I liken this procedure to Hysterotomy, of which I am a strong advocate.

To the objection that opening the stomach exposes the patient to the danger of peritonitis, I can only say that I have opened the stomach many times and have never seen peritonitis follow it. That the danger cannot be great is proved moreover by the fact that I have operated upon thirty-one cases of acute perforation of the stomach and duodenum with but one death, though in all these cases there was much more soiling of the peritoneum by gastric contents than could possibly occur during a gastrotomy.

Smaller hemorrhages, if persistent, also strongly dictate surgical measures.

If perforation or conspicuous bleeding are absent, at what point does a gastric ulcer cease to be a medical condition? Clearly, it seems to me, when it is seen that such medical treatment as can be employed fails in a reasonable time to cure the ulcer. *Cure* should be sharply distinguished from *remission* or improvement of symptoms. Recurring ulcer symptoms mean only one thing, failure of cure, and to incur the risk of the grave complications, which are likely to follow chronic relapsing ulcer, is an unjustifiable assumption of responsibility. We must not stop short of surgery if the ulcer is refractory to other methods. One relapse after thorough treatment, two or at the most three relapses after treatment imperfectly carried out should convince one that chronic ulcer of a refractory type is present.

The question of the proper surgical treatment of a gastric ulcer can be decided only after the abdomen has been opened and the condition present thoroughly explored. Complete excision of the ulcer may be spoken of as the ideal treatment, but like ligating an eroded vessel in an ulcer bed, or many other measures theoretically ideal it can seldom be accomplished. Localized saddle ulcers on the lesser curvatures, ulcers strictly limited to the pylorus or small punched-out ulcers elsewhere in the wall, are those which are best adapted to excision. Given a patient in good general condition, and an ulcer that can be so removed that subsequent closure can be made without undue distortion of the stomach, and without tension and danger of leakage, excision is the method of choice. If such an ulcer be unusually hard and suspicion of malignant degeneration is entertained, there is the greater need for excision. If excision has been done, it is best to make a gastroenterostomy even though the pylorus has

not been encroached upon. A less dangerous method of removing the ulcer completely is the so-called exclusion, which consists in placing occluding ligatures through all the thickness of the stomach wall, encircling the ulcer completely and cutting off its blood supply so that it separates as a slough by ulceration into the interior of the stomach.

This is, however, not applicable to ulcers on the curvatures in relation to the main blood supply of the stomach and where the dimpling of the stomach produced by infolding the ulcer cannot be protected by intact peritoneum. While it can be carried out in this location by first ligating the vessels proximally and distally in order to avoid the risk of secondary hemorrhage, it is not a good surgical procedure and is less satisfactory than immediate excision. Neither is it advisable to try this method in cases complicated by marked inflammation or fibrosis of the stomach wall spreading out beyond the confines of the ulcer.

Our chief reliance in the treatment of gastric ulcer is gastroenterostomy. Concerning this operation we have learned a great deal during the last few years. It was first proposed as an operation to drain the stomach and gain rest for the ulcer during the process of healing. The results in a considerable percentage of cases were good, thus justifying its continuance. We have found, however, that, except in the presence of stenosis or spasm of the pylorus, it is of no great service from the standpoint of drainage. Gastric digestion goes on in the presence of a gastroenterostomy and the emptying of the stomach is not markedly accelerated. It is not probable that any purposeful sphincter forms about the opening comparable to the pyloric sphincter, but it, nevertheless, requires expulsive movements of the stomach to make the opening functionate and these in turn are regulated by the physiology of gastric digestion. That it does functionate and thereby facilitate the emptying of the stomach cannot be denied, and, therefore, it may be credited with some slight value in this respect. It has become the fashion to assert that a gastroenterostomy does not functionate in the presence of a patulous pylorus and even that complete closure may be expected. This is based upon reports of complete closure of the opening and upon experimental radiographic work by Cannon and others. Recently Hartmann has drawn attention to the fact that a button anastomosis is more likely to close than one made with the suture and also that a gastroenterostomy improperly placed will probably not functionate and in the course of time undergoes obliteration. He has shown conclusively, also, that a gastroenterostomy made with suture and properly placed in the pyloric part of the stomach will remain open even if the pylorus is patulous and that both may functionate simultaneously. I have not investigated this phase of the subject so thoroughly as Hartmann, but I have radiographic and operative evidence in a number of cases that both the pylorus and the gastroenterostomy are open and functioning after a considerable period of time. Under these circumstances there is less necessity of attempting to occlude the pylorus in the cure of gastric ulcer, though it has been my practice to do so by plication, having been influenced by the claims made as to the necessity for this procedure in order to preserve the new opening. In duodenal ulcer it is certainly best to close off the duodenum in order to secure greater protection for the ulcerated area. It is a difficult matter to insure absolute and permanent closure of the pylorus or duodenum by any measure short of division and turning in the ends. A ligature

will soon cut through and allow re-establishment of the lumen. Various methods have been devised which are less troublesome than this. It may be tied off with the liberated round ligament of the liver as Murphy suggests. A broad ligature may be made with a strip of transplanted fascia. I have used nothing but plication and reinforcement with available omenta. This, I am aware, may free itself in a few weeks or months, but I am not sure but that this is an advantage, for in the meantime opportunity has been given for all but the most refractory ulcers to heal, after which the normal physiology may advantageously be re-established. Hartmann's work as to the permanency of gastroenterostomy openings is a point in favor of this method.

More important than the consideration of drainage is that of the change which ensues in the chemistry of the stomach following gastrojejunostomy. Bile and the alkaline duodenal fluids enter the stomach freely and by counteracting this acidity undoubtedly favor the healing of the ulcer. Still it must be admitted that it is in ulcers of the pyloric end of the stomach with associated stenosis or spasm of the outlet that gastrojejunostomy finds its most brilliant successes. In some cases where there was reason to expect satisfactory results, disappointment has resulted because of improper after-treatment. After gastrojejunostomy there is usually a prompt recovery and a feeling of perfect health with such an appetite as one would expect from the half-starved subjects of ulcer. As a result, all sorts of dietetic indiscretions may be indulged in. One must remember that the ulcer is still present and that the margins of the gastrojejunostomy require time for healing and epithelialization. Gastrojejunal ulcers, while fortunately not a frequent complication, may yet occur and would certainly be favored by a disregard of the plain rules of caution immediately following operation. Everyone who has had a gastrojejunostomy should be sent back to his physician, who should exercise a careful supervision over his mode of life and diet for a period of at least three months. This may be unnecessarily long in some cases, but it is too short in others. There should be abundant rest and the diet should be light and easily digestible. More frequent, but regular, small meals are preferable to large amounts taken at one time. In other words medical treatment after the operation for gastric ulcer is just as essential as it was before, the only difference being that it can be carried out with every hope of success.

Less satisfaction has been experienced in the treatment of ulcers of the fundus by gastrojejunostomy. Here it is also that excision is most difficult or impossible. It remains to consider the applicability of jejunostomy to the severer forms of fundus ulcers as well as to the grave types of ulcer complicated by extensive fibrosis of the stomach with distortion and impairment of its expulsive power or in cases characterized by extensive carcinomatous infiltration of the wall which may occur without noteworthy metastases. In this country fistulas into the bowel are regarded, and rightly so, as very undesirable objects of surgical intervention.

I have little sympathy with surgical operations designed to make a miserable end more prolonged. Yet a jejunostomy performed for the proper indications may result in the prolongation of life in comparative comfort for a considerable period of time. It may occasionally disprove a diagnosis of malignant disease made on the gross characteristics, and in the case of otherwise incurable ulcer the absolute rest that may be given to the stomach by the procedure

may end in healing and resumption of approximately normal function.

If I have been able to convey any impression here tonight I hope it has been that the surgical treatment of gastric ulcer is not to be summed up in the word gastroenterostomy, that each case is a problem in itself, demanding not only surgical skill, but ripe judgment and familiarity with the normal and surgical physiology of the stomach so far as it is now known.

Finally, it is clear that this is peculiarly a field in which the surgeon and internist must work together if the best interests of the patient are to be conserved.

FOREIGN BODIES IN THE APPENDIX AND THE RESULTING LESIONS.*

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IN the early history of appendicitis, fecal concretions were not infrequently mistaken for strawberry seeds, grape seeds, orange pips and other foreign bodies. As a result these figured conspicuously as etiologic factors. Careful investigators, however, soon found by chemical and physical tests that true foreign bodies were rarely found in the appendix and that fecal concretions probably played a subsidiary, if any, role, in the production of the disease. Since the demonstration of the nature of fecal concretions and the recognition of the extremely rare occurrence of true foreign bodies in the appendix, little attention has been paid to the subject.

There is room for justifiable skepticism as regards the accuracy of the early statistics especially those of Fitz and Matterstock, who in 1880 and 1886 reported that foreign bodies were present in about 12 per cent of cases. Mitchell reported in 1899, 7 per cent in 1,400 cases; Murphy in 1904, 2 per cent in 2,000 cases, and Fowler, two years later, $\frac{1}{2}$ per cent in the same number. The combined statistics of seventeen different observers from 1880 to 1906 show a total of 10,095 cases and foreign bodies present in $2\frac{1}{2}$ per cent.

A great variety of foreign bodies have been described, tooth brush bristles, fragments of enamel from saucepans, egg shells, hair, spicules of bone and splinters of wood, worms, seeds, pieces of solder, shot, pins and needles.

Sharp pointed metallic foreign bodies represent a class by themselves. They have been rarely found in large surgical experience. The common domestic pin, the most frequently encountered and dangerous body of this nature found in the appendix has been made the subject of this paper. McBurney and Roswell Park have each seen but two cases. Abbe, Dawbarn, Deaver, Kammerer, Keen, Mayo, Ochsner and Parker Syms, have each seen but one case. A. O. J. Kelly found one instance in a study of 460 cases, Kelly and Hurdon but one in 1,000 cases and Bell two in 1,000 cases. Ewing, Schultze and Wood in exceptionally large pathologic experience have observed none. Barnes in a study of 94 cases of true foreign bodies found in the appendix, estimated that more than 52 per cent were pins. The writer observed the following case which stimulated interest in the subject.

* Read before the Brooklyn Pathological Society, February, 14, 1914.



FIGURE I.



FIGURE II.



FIGURE III.



FIGURE IV.

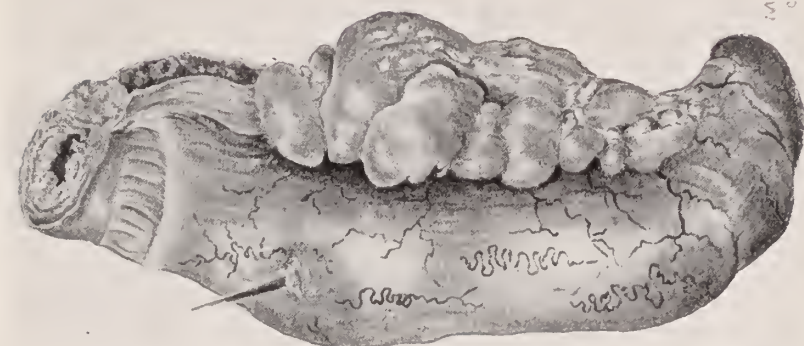


FIGURE VII.

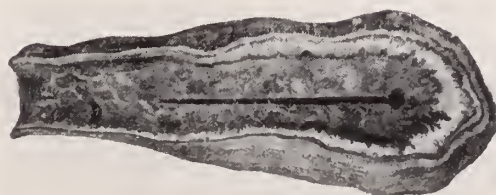


FIGURE VI.



FIGURE V.

Reproduced from Annals of Surgery.

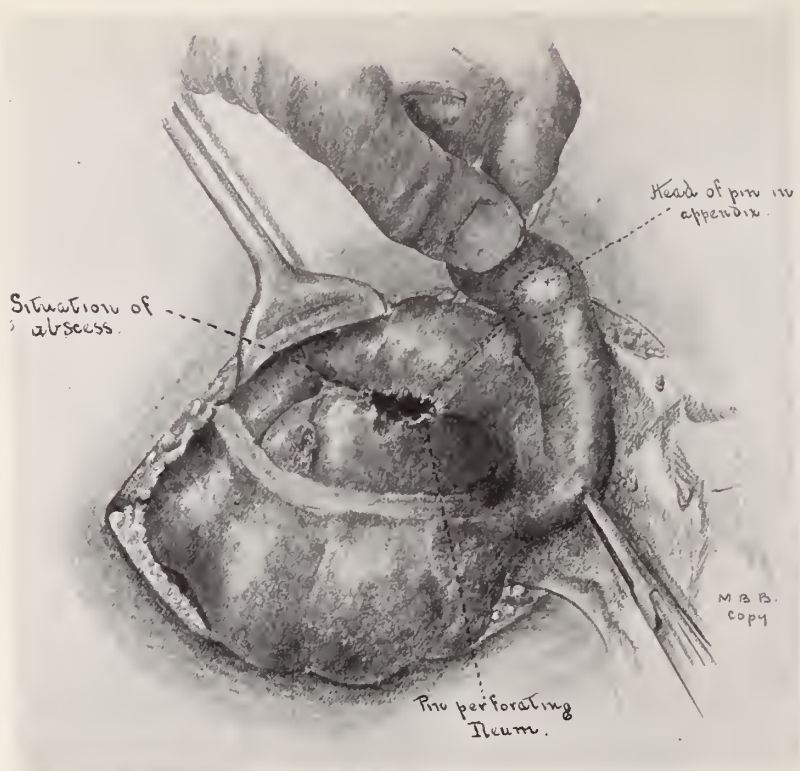


FIGURE VIII.

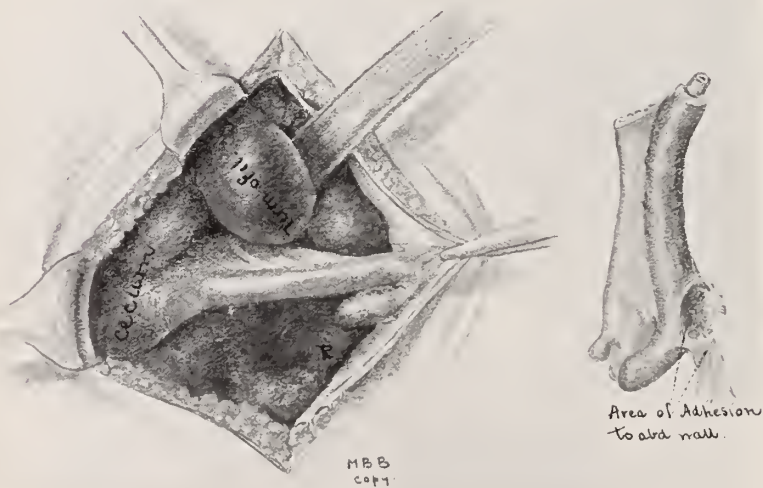


FIGURE IX.

Reproduced from Annals of Surgery.

Mrs. X, age 66, referred by W. H. Slaughter, was admitted to the German Hospital, August 28, 1911, with the following history. Temperature on admission $102\frac{1}{2}$, pulse 128, respiration 28. The chief complaint was diffuse abdominal pain. Present attack commenced three days prior to admission, with acute pain in the umbilical region which increased in severity and a few hours after the onset was followed by vomiting of greenish fluid. The following day pain was felt in the right iliac fossa and gradually spread until the entire abdomen was sore to the touch. Patient again vomited. At the onset, bowels moved following catharsis. Last movement in the morning before the day of admission. Her past history revealed the fact that three years before she had an attack of abdominal pain with vomiting and without jaundice which was diagnosed as gall-stone colic. Following the subsidence of this attack she was well until the present. Examination on admission showed a universally tender and rigid abdomen, somewhat distended. Facies of diffuse septic peritonitis. The preparatory enema was expelled clear, without flatus or fecal matter. A right rectus incision was made. Pus under tension spurted upon incising the peritoneum. The appendix was isolated, ligated and excised. A diffuse peritonitis was present. Large rubber drains were inserted into the pelvis and down to the stump of the appendix. Upon examination of the appendix it was found to be gangrenous at the middle, perforated and contained a large enterolith. The appendix was split, enterolith crushed, and the pin discovered entirely encrusted by fecal matter (Fig. 1). The head of the pin was directed downward. It is interesting to note that it was not the pin which had perforated the organ. The fecal concretion was very hard, distinctly laminated. From the fact that it had completely surrounded the pin it is probable the foreign body had been present a long time. It is possible that the attack of abdominal pain three years previously was due to appendicitis. We were unable to obtain a history of the woman having swallowed the pin.

J. F. Michell has collected thirty-three cases of pins in the appendix, Kelly and Hurdon have added thirteen cases to this list. The writer in searching the literature has been able to find four cases which were overlooked by these observers, namely those of Amyand, Markoe, Woolsey, and an additional case reported by Roswell Park. Patterson writing upon the subject in 1906, contributed two additional cases (personal communications from J. C. Hearst and C. H. Frazier). Eleven other cases, including the writer's, have been reported up to 1912 making a total of sixty-three cases.

It is of historic interest to note that the first authentic case of pin in the appendix was reported by Claudius Amyand, and according to Deaver is also the first recorded case of appendectomy performed upon the human subject during life. On December 6, 1735, he operated upon a boy of eleven years for the cure of a discharging sinus in the right thigh, which evidently communicated with an irreducible scrotal hernia. Hernia had existed from infancy and for one month there had been a discharge from this fistula. It was evident that the cure of the sinus depended upon that of the hernia. "This operation," to quote Amyand, "proved complicated and perplexing, many unsuspected oddities and events occurring to make it as intricate as it proved laborious and difficult." The hernia was found to be chiefly omental, "the size of a small pippin." "In its interior lay the appendix cecum, which had been perforated by the point of a pin. The head, covered with



FIGURE X.

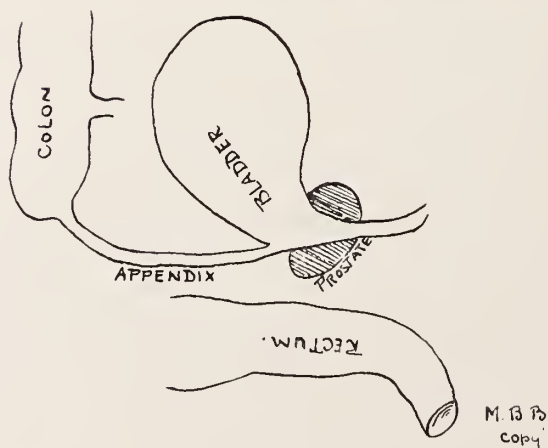


FIGURE XI.

Reproduced from Annals of Surgery.

much encrusted stone, remained within the appendix, acting as a ball valve and allowing at the most unexpected and inopportune moments a copious discharge of fecal matter over the field of operation."

Twenty-three cases in this series occurred in children under eleven years of age. Twenty-four cases occurred in females. Such predisposing occupations as seamstress, tailor, nursemaid, etc., were mentioned in three instances. A history of the patient having swallowed the pin appeared in five records.

The pin may be found free from deposit, rusty or corroded and brittle. It may form the nucleus of a fecal concretion and be either partially or entirely surrounded. In cases in which the pin was not entirely surrounded the head was frequently found covered with fecal matter. (See figs. 2 and 3.) In the series twenty-two were encrusted, seven completely, fifteen partially. The pin usually enters the appendix head-first; is generally found straight, but in two cases it was bent (McPhedron and Caven). In most instances it lay parallel to the long axis of the appendix. In four cases, it was found to lie transversely across the lumen.

The lesion associated with this foreign body is variable. It has been stated that evidence of inflammation has been entirely lacking. Without microscopic examination, however, its detection is not always possible. In some cases the external appearance of the appendix has been apparently normal or there has been slight thickening of the walls. In one case inflammation was found to be limited to the portion of the appendix which contained the pin. (Edmunds, see fig. 6.)

A foreign body may apparently set up very little irritation and may not be active in causing an acute inflammation until surrounded by a fecal concretion. According to some authorities a foreign body can not enter a normal appendix.

In forty-eight cases the appendix was perforated. In some cases the perforation occurred as the result of transfixion or of ulceration by the pin. The head may ulcerate through one wall and the point perforate the opposite wall. McBurney found two pins in this way lying parallel to each other. Hirst also found two pins in an appendix which he removed. In three cases the point of the pin had become embedded in the wall of the appendix without causing perforation. In a few instances, the head, surrounded by a concretion had remained in the appendix and formed a ball-valve, the point and shaft lying outside (fig. 4). The head caused ulceration in four cases (fig. 5). The pin was the direct cause of perforation and had transfixed the appendix in twenty-one cases (fig. 7). Transfixion usually took place near the base or middle.

Kingdon has reported a case in which a pin was found in the urinary bladder to which the appendix had become adherent and formed a communication through which the pin had become discharged. This patient discharged worms from the urethra in addition to feces.

In four cases pins have been found in appendices contained in hernial sacs (fig. 10). In one of these, a strangulated hernia, the pin had perforated and protruded into the dartos of the scrotum. In eight cases pins were found in remnants of the appendix causing a persistent sinus. A pin was also discovered in the discharge from an appendiceal abscess. In another instance, a pin was detected by a probe in a tract which operation subsequently revealed led to remnants of an appendix. Pins in the appendix were associated with abscess of the liver in eleven cases. Deseminated peritonitis was present in thirteen

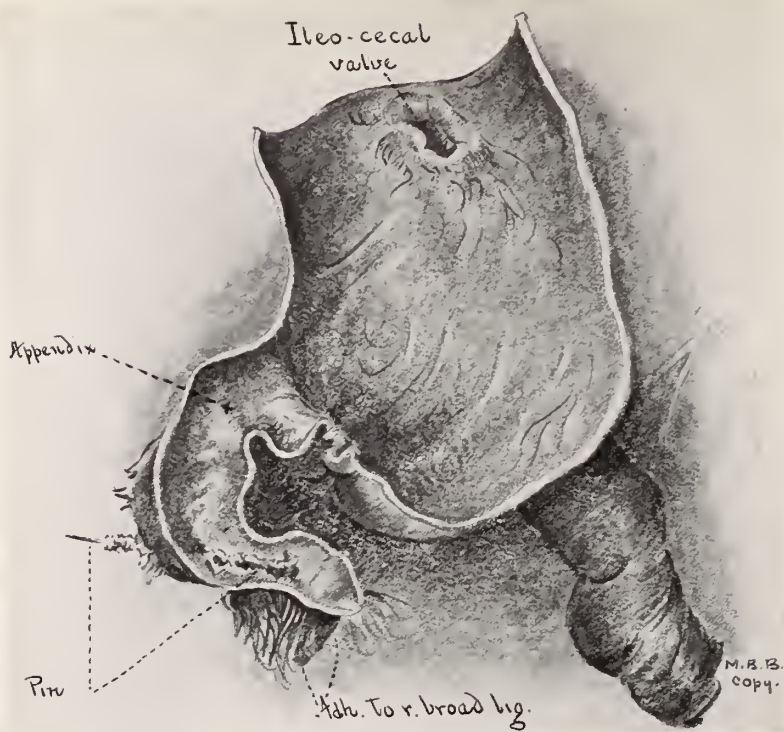


FIGURE XII.



FIGURE XIII.

cases, abscess in thirty. In a few cases in which the pin had trans-fixed the appendix adhesions formed about the point and shaft. In eight cases pins were found in an abscess cavity communicating with the appendix or its remnants.

In but very few instances have foreign bodies been suspected before operation. The duration of abdominal symptoms has varied. In two cases it was stated that no symptoms had existed referable to the appendix. The minimum duration was a few hours, the maximum fifteen years. Symptoms were chronic in about 50 per cent of cases. Most of these exhibited an acute exacerbation. Acute symptoms of less than ten days duration without previous attacks were present in thirteen cases. Mild symptoms are the rule, with recurrent attacks. Signs of rapid perforations at the outset without a history of previous disturbance is very rare. In a few instances pins have remained dormant in the appendix until lighted up by a blow upon the abdomen.

CONCLUSIONS.

(1) Foreign bodies are present in the appendix in about 2½ per cent of cases.

(2) More than 52 per cent of all foreign bodies are represented by the common domestic pin.

(3) The habit of infancy and childhood, *i. e.*, placing everything in the mouth, is apparently responsible for about one-third of the pin cases.

(4) Nurse maids, seamstresses, tailors and those whose occupations might predispose to this condition have rarely been victims of this form of appendicitis.

(5) History of having swallowed the pin is rarely elicited.

(6) The presence of a foreign body in the appendix is usually associated with inflammation. This may only be detected by microscopic examination.

(7) Appendicitis associated with the presence of foreign bodies is more often chronic with recurrent attacks than acute.

(8) In the majority of cases there is no reason to ascribe perforation of the appendix directly to the presence of the pin.

(9) If histories are retaken in the light of operative findings, reconstruction will reveal fewer cases of foreign bodies in the appendix which have existed without symptoms referable to their presence.

TWILIGHT SLEEP.*

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TWILIGHT Sleep, which has received so much attention from the lay press in the past few months, is neither a new nor startling discovery; it is simply the application of partial narcosis to the most painful ordeal in a woman's life, in such a way as eliminate the memory of subjective pain without interference with the uterine contractions.

Twilight Sleep, or "Dämmer Schlaf," as it is called by the Freiburg school, was first recommended in labor by Von Steinbuchel some twelve years ago. In 1906, Gauss reported his first series of five hundred cases from the clinic at Freiburg. Following this report,

* Read before the Kings County Medical Society, October 20, 1914.

the method was promptly taken up in this country by Green, Newell, Halpenny, Vrooman, Reis, myself and others, using scopolamine or hyoscine hydrobomate 1/200 grain, combined with $\frac{1}{8}$ of a grain of morphia, which was repeated in larger or smaller doses every two hours; this dosage gave us sufficiently bad results to cause the method to be promptly discarded. The children were narcotized or asphyxiated, the labors were prolonged and forceps became a frequent necessity. Delirium was common and postpartum hemorrhage was no infrequent complication.

These results were not so much the fault of the method, as of the individual using it. The children and women were morphinized. This fact has been repeatedly brought home to me since my visits to Freiburg in 1909, 1912 and 1914. There, in a picturesque, quiet little town at the edge of the Black Forest, Krönig and Gauss have continued to use and study the method, modified it, and have at last developed a technique which is safe and efficient when intelligently carried out. They have recently published a report of 4,111 cases of labor in which narkophen and scopolamin have been used, with a lower fetal and maternal mortality than has been secured in any other clinic in Europe. These results have been attained, first, by individualizing the patient; second, by limiting the number of vaginal examinations, and giving each woman a full test of labor, without reducing her physical strength, by subjecting her to nerve racking pain; hence, all operative procedures were done in dilated passages and trauma and infection have been reduced to a minimum.

It is not my purpose in this brief paper to burden you with the chemistry and physiological action of scopolamin and narkophen, but rather to give you a brief statement of some of the advantages of painless labor, its dangers, its indications, its limitations, a description of the technique employed, together with a frank report of our results from its employment at the Long Island College Hospital.

I must also take this occasion to acknowledge my indebtedness to my associate, Dr. Ralph M. Beach; my assistant, Dr. H. B. Matthews, and my resident and obstetric internes, Drs. Gillis and Bartley; who, by their close observation and untiring efforts have made this success possible.

Statistical studies show us that it is possible to produce analgesia and amnesia in 90 per cent of the cases in which Twilight has been induced, hence we contend a woman is entitled to the relief of pain during labor, if she can get it, *without undue risk either to herself or the unborn child*. We no longer ask our patients to submit to surgical operations without ether or gas, many of us use ether or chloroform as a routine during the perineal stage in ordinary labor; we likewise narcotize the woman for a forceps delivery or primary repair of the pelvic soft parts. Why not extend this comfort throughout labor by producing amnesia and analgesia with safe doses of scopolamin, which does not, if judiciously used affect uterine contractions when they are once established?

You say labor is a normal and physiological process; one wouldn't think so after twenty odd years of consultation obstetrics in Brooklyn and New York. Over 50 per cent of all of our gynecology is the result of badly conducted physiological labor. Poor diagnosis in labor is more frequent than in any department of medicine and surgery, except perhaps in cancer. The practitioner has not made the progress in the art of obstetric diagnosis and procedure that he

has in the other branches, or he is blinded by the dictum that it is all a normal process.

Many of us seem to forget that the cervix must be open before the child can pass through it; others delude themselves into the idea that they can artificially dilate the soft parts as perfectly as with nature's processes, and few of us give nature sufficient time to prepare the way. Dead and mutilated babies, torn and prolapsed organs, with resulting morbidity from infection, are some of the causes which have produced this public demand for adoption of the Freiburg method.

We educate the public how to prevent disease; they are going to educate us how to prevent many of the disasters of child-birth, by insisting on better antepartum and interpartum care. Do they not even now insist on routine antepartum examination of the pelvic diameters, urine, blood pressure, etc.?

Painless labor by partial narcosis with scopolamin and narkophen is an assured fact and when used in properly selected cases, where the fetal and pelvic relations are normal or approximately normal, it permits nature to take time to perfectly prepare the cervix, vagina and vulvar orifice for the passage of the fetus without producing in the woman physical or muscular fatigue.

It is easier to dilate the sphincter ani under anesthesia than with the patient conscious; so it is easier to dilate the cervix when the pain of this dilatation is not felt by the patient, than when the circular muscle is in spasm; particularly is this so when the dilatation is accomplished by those forces intended for this purpose.

The advantages, therefore, of painless labor are less nervous shock, less muscular effort and easier and more prompt cervical dilatation. Our observation proves that scopolamin and narkophen actually shorten the first stage of a primiparous labor by more promptly overcoming the soft parts' obstruction. This is not so of the second stage which may be prolonged beyond safe limits if the attendant is not keeping close watch of his patient.

Scopolamin-narkophen anesthesia is not without danger; neither is the production of narcosis with ether free from accident or complication; yet, in proper hands these dangers can be and are minimized.

The mother may be particularly susceptible to scopolamine or morphine, the former causing delirium, the latter coma; or the respiration may become arrhythmic, and reduced to five or six per minute. The kidney secretion may be diminished or anuria develop; labor may be prolonged, especially the second stage. Uterine atony is possible, and postpartum hemorrhage has been charged to the method by some American observers.

In our clinic we have found that all of the above-mentioned dangers are exaggerated and are due to too much morphine and can be anticipated and prevented by intelligent administration, by the use of the minimum dose to produce sleep, the individualization of the patient, and the very free exhibition of water throughout the narcosis. It may even be justifiable, in cases with kidney lesions to give saline by hypodermoclysis or colonic irrigation during the labor, and thus dilute the toxic effect of the drug on the kidneys.

It has been claimed by the critics of this method, that the child is apt to be asphyxiated and narcotized; this again is not the fault of the method, but of the dosage. The child does participate to some extent in the Twilight Sleep. Many of the children suffer from oligopnea for several minutes and it is common for the child not

to cry for two or three minutes after birth, though the fetal heart may show little or no disturbance in rate or rhythm; there is, however, no cyanosis unless the dosage of morphine has been too large or given at too frequent intervals, or the second stage has been allowed to continue too long.

The child after stretching itself, as if awaking from a restful and peaceful sleep, cries as lustily as the ordinary new-born infant. As the patient may be wholly unaware of the progress of labor, even during the perineal stage, is not uncommon for the fetus to be delivered unannounced, as the change in the character of the woman's pains may not be noted by the attendant, unless the vulva is exposed. It is possible, therefore, for the fetus to drown in the gush of amniotic fluid, should such an accident go unobserved.

From our observations both here and abroad, we are convinced that there is no reason why "Dämmerschlaf" should not be given to all women who show the physical signs of active labor, provided that the woman is under continuous and intelligent observation.

It is particularly indicated in nervous women, of the physically unfit type, in their first labor, for it is in this type of woman that labor has most often, in ordinary practice, to be terminated artificially, owing to the physical exhaustion so common at the end of the first stage, before cervical dilatation is complete, or in the second stage, when no more force can be brought upon the uterus by the abdominal muscles. The usual obstetrical interference by forceps in the presence of unprepared soft parts results in a permanent morbidity and is the largest contributor to our collection of chronic invalids.

It is just in this class, the physically unfit, that scopolamin will give the best results, for by its use we are able to attain full dilation of the cervix by the physiological factors, *i. e.*, the bag of waters and the force of the uterine contractions, before the patient begins to show signs of physical tire. In dry labors, the exquisite pain which is produced by the pressure of the presenting part on the sensitive congested cervix is relieved and the cervical ring relaxed. The presenting part is therefore driven through the pelvis and well into the vagina, and low forceps in a dilated passage is the most serious intervention to which the woman is subjected. Operative traumatism is thus reduced to a minimum. Surely scopolamin would *be worthy of a place in midwifery*, were it only to secure for us, as it does, full dilation of the cervix.

All of us of any obstetric experience have noted the effect of a full dose of morphine near the end of the first stage, in dry labor, and have seen the cervical ring actually melt away under its influence; this is accomplished by allaying restlessness, allowing the woman rest and sleep between the pains, diminishing the cervical sensitiveness and relaxing the cervical spasm. Scopolamin-narkophen analgesia does all this, and in addition permits the labor to proceed without the patient having further knowledge or memory of subjective pain.

There can be no doubt that dry labors, due to early rupture of the membranes, will afford an excellent field for Twilight Sleep. Borderline contractions will offer another indication for its trial, for all primiparæ with borderline contractions must be given a test of labor before instituting operative measures: This means that the cervix must be dilated, the membranes ruptured, and that the uterine contraction, aided by proper posture, be given a chance to drive the

presenting part into the pelvis. This all takes time and effective labor pain. These patients are in need of rest, because having labor pain is work, and work exhausts. Under combined analgesia the woman may be carried for hours without showing any of the classical signs of exhaustion, in the character of the pulse or in the character of the labor pains, and if operative delivery is indicated in the interest of the mother or child, it may be accomplished with less general anesthesia.

In our private and public clinic at Long Island College Hospital we have been using scopolamin and narkophen in all labors, unless the patient has refused the treatment, and have found after carefully analysing our cases and results that our best results have been attained by observing the following suggestions:

First, The patient should be definitely in labor; that is having appreciable uterine contractions, recurring at regular intervals, preferably every four or five minutes before the first injection is given. In multiparæ the initial dose may be given at the very beginning of labor. The woman should be in bed, in a well-ventilated, darkened room, removed from all noise or excitement, as by observing this both amnesia and analgesia may be obtained with much smaller doses.

Second, Careful observation must be made and should be recorded, of the pulse, respiration, condition of the pupils and the frequency and character of the uterine contraction. It is unnecessary to disturb the patient for memory tests, as observation will show how deeply she is under the influence of the drug; ordinarily, the woman will give outward evidence of acute suffering during the pain, but will immediately lapse into a peaceful sleep at its cessation.

Third, She requires large quantities of water but no food throughout her labor. Water is best given just after the pains.

Fourth, The progress of labor must be constantly watched by repeated abdominal or rectal examinations. It is well known that frequent vaginal examination invites SEPSIS. Private cases seldom have any vaginal examinations during labor: Following the position of the shoulder as it rotates inward and descends is a good index of the progress of labor.

Fifth, The fetal heart must be listened to and recorded every half hour, both in the interval between and during the pains. Arythmia or slowing of the fetal pulse between pains is a bad prognostic sign and demands withholding the further use of the drugs and prompt delivery by the most suitable route and method.

Sixth, The solutions of the drugs must be absolutely pure. Hyoscine cannot be substituted for scopolamin, but narkophen is no better than morphine. The American preparations have produced delirium.

Seventh, The dosage differs in each individual case, and especially with the time of labor at which induction of the sleep is attempted. It is easier to induce sleep in a woman early in the first stage, than when she is near the end of her dilation stage.

Eighth, Intelligent employment of the method shortens the first stage; on the other hand it may prolong the second; *this should be guarded against*, and if the perineal stage lasts over an hour in multiparæ or two hours in primiparæ, delivery should be effected with the patient in the *Schmitt posture*, with extreme flexion of thighs on the abdomen, combined with expression of the fetus, or by low forceps. An extended use of pituitrin has convinced us of its dangers to the child after the head has passed out of the cervix and the uterus is

moulded and firmly contracted down on the body of the fetus. Compression of, and separation of the placenta from the violent uterine contraction induced by pituitrin has caused asphyxia too many times to be simply coincidental. Pituitrin is oftentimes as dangerous as ergot, when used before the *uterus* is completely emptied.

Ninth, The third stage is not influenced by scopolamin or narkophen, and when properly used they do not predispose to postpartum hemorrhage. The placental stage should be managed so as to secure the separation and expulsion of the placenta, and retraction of the uterus by the normal process. We do this in our clinic by placing a clamp on the cord, close to the vulva orifice and leaving the fundus absolutely alone. When separation occurs it is shown by a gush of blood from the vagina, expulsion of the cord and rising of the fundus; the hand is then placed on the fundus and the patient asked to bear down when delivery of the placenta is easily accomplished.

Tenth, Low forceps, perineotomy and primary suture of the pelvic floor injuries can all be done without further anesthesia, and the patient have no recollection of the procedure.

TIME AND METHOD OF EMPLOYMENT: Scopolamin and narkophen come in ampules containing 1 cc. *The solution*: Each ampule contains respectively, scopolamin .0003 gram or 1/200 of a grain; narkophen, .03 gram or $\frac{1}{2}$ a grain. They are used as follows; if the labor pains are definitely established, one and a half ampules of each is given hypodermatically as the initial dose; forty-five minutes later, one ampule of scopolamin is administered alone; one hour later, half an ampule of each is given. This is followed every two hours or so by half an ampule of scopolamin alone. It is seldom necessary to repeat the narkophen, though it may be used every third time, at six hour intervals in a long labor; of late we have been able to omit the narkophen after the first dose. It is the narkophen which has the bad effect on the child. Smaller doses are required when the sleep is induced early in labor, larger doses when the first stage is well advanced before the sleep is induced. It is in the latter class that there is the most danger to the child, as the child gets the full effect of the drug.

In our cases at Long Island, fifty-one in all, there have been no failures. The patients have had no recollection of the labor. The children in all except two cases have shown no signs of asphyxia or cyanosis. One patient, a private case of my own, had a long second stage, and the child had inspired much mucous in its passage through the vagina and had to be resuscitated by aspiration and mouth to mouth insufflation. There has been no postpartum hemorrhage, there have been two low forceps, the placenta was delivered without difficulty in all; none of the women have shown signs of tire or exhaustion the next day. Multiparæ have had some after pains, which a full dose of ergot and assuming the sitting posture have quickly arrested. Many women were allowed up on the fifth or sixth day, unless they had sustained severe perineal injury, and this has been minimized by the slow perineal stage. All of the women have had much less nervous and muscular exhaustion than follows in the same class of patients in ordinary labor.

In conclusion, we are impressed with the wide field of usefulness that scopolamin analgesia will cover in modern hospital obstetrics. The time and care necessary for its successful administration will hardly warrant the busy practitioner using it as routine in general obstetric practice, unless the ordinary obstetric fee rises coincident

with other advances in the high cost of living. The plumber and bricklayer are constantly being better paid for their time and it would seem to me only just that the obstetrician be paid proportionately for his.

(For discussion see p. 478.)

TWILIGHT SLEEP.*

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THE present propaganda by the periodical press for the education of the public on the subject of medicine, is not without its dangers unless properly censored. Scientific medicine is far removed from mysticism today in most of its branches; and the dissemination of medical knowledge is of distinct advantage to the advance of civilization. However, the over enthusiastic exploitation of scientific discoveries in medicine as panaceas for physical suffering is quite likely to lead to skepticism and to the casting aside of useful agencies for the relief of suffering.

Twelve years ago Von Sternbuchel called the attention of the medical world to the fact that Scopolamine would blot out a parturient's memory of her pains. Krönig and Gauss—1906—reported a series of cases in which they had by the use of morphine and scopolamine rendered a series of women such service that after childbirth the patient had no recollection of the labor in 90 per cent of the cases.

Other clinics in Europe and America endeavored to get the same results and failed because, as Gauss says, they did not carry out the technique as done at Freiburg. The treatment was applied in this country chiefly through the efforts of a drug house in the middle west. It never came into general use, because the results were not satisfactory. Boisterous delirium and hemorrhage in the mother and deeply asphyxiated babies frightened the workers till the method was condemned and cast aside. In the meantime work continued in the Freiburg clinic under Gauss succeeded in perfecting a technique, until their series of cases was over six thousand, with such success that the mortality of their clinic in both mothers and children is lower than any other clinic in Europe.

Through public interest, aroused by the lay press this spring, the attention of the medical world was forced to further investigate the work of Krönig and Gauss. Numerous pilgrimages for bedside study were made by American obstetricians to the little town by the Black Forest. The result has been a renaissance of Twilight Sleep in America.

What is Twilight Sleep? Dr. Polak's definition is the best in my opinion: "It is simply the application of partial narcosis to the most painful ordeal in a woman's life, in such a way as to eliminate the memory of subjective pain without interfering with the uterine contractions."

Partial narcosis in easing labor pains and effecting the dilatation of the cervix has been accomplished in many ways for many years. The drop chloroform inhalation at the beginning of the pain, the full dose of choral by the bowel, the full hypodermic dose of morphine,

* Read before the Montgomery County Medical Society, October 27, 1914.

all these have been used to permit the completion of the dilatation of the cervix, particularly in those neurotic women who cry for help in this period in which we know that help should never be given except for some grave complication. Women who tempt us, weary with watching and sleeplessness, to go at these unprepared parts with resulting chronic invalidism and gynecological operations. Alas, the temptation overcomes many if one may judge from the amount of material that still presents itself for operation. Perhaps it is well that our attention is again drawn to the management of the pain of childbirth.

In scopolamine with morphine, or better yet with narcophin, we have a combination of drugs which acts not only as an analgesic but also as an amnesic. Not only does she not suffer so much pain, but the memory of such pain as she has is blotted out of her mind. In order to understand just what is aimed at in *Twilight Sleep*, one must recall the following three recognized zones of consciousness.

I.—Impressions are received and stored up in the mind—full consciousness.

II.—Impressions are neither received nor stored up—complete unconsciousness.

III.—Impressions are received but are not stored up—*Twilight Sleep*—subconscious blotting out of all impressions including pain.

This last zone is the desired object in the use of these drugs. If she is too deeply under, the labor stops. If too lightly under, she remembers everything.

The method of accomplishing this is by giving small doses of scopolamine repeated at regular intervals, giving narcophin with the first and every other dose, called Segals methods of dosage; and the Gauss method, which is to study the effect of the drug on the patient by means of a memory test, so called, and repeating the dose in varying quantities depending on the susceptibility of the patient to the effect of the drugs, the narcophin or morphine being given only once in fairly full dosage.

Of the two methods the first is the simpler method, but owing to the varying susceptibility of patients is fraught with greater danger to mother and child.

The latter method, the individualizing method of Gauss, is much to be preferred, being much safer for mother with little danger to child, but exceedingly exacting for the physician who must be constantly at the patient's bedside.

I referred to memory tests as indicating the degree of narcosis. These are made by testing the patient's memory, by asking her as to the number hypodermics she has had, or the number of examinations she has had or by showing her some object not too familiar and then in fifteen minutes, showing it to her again and asking what it is and if she has been shown it before or asking her what was shown her. If she knows, she is not under. If she does not know, she is under and the test is again tried in about half an hour, and so on.

The patient gradually becomes quieter in from twenty minutes to three-quarters of an hour. She ceases to cry out and actually sleeps between the pains, rousing more or less with the acme of pain, talks about having a pain or only groans or mutters some incoherent talk and then as the contraction wears off she goes to sleep again. The pains become gradually more frequent and she is more restless with the pain, and examination shows the head on the perineum and after a perineal stage somewhat longer than usual, which allows very

gradual dilatation of the perineum, the child is born. This is the ideal Twilight as seen in the majority of patients.

It is easy to arouse these patients, and if only slightly under, arouse them to full consciousness. Memory may return for a few moments, technically called an isle of memory, and, of course, if these isles occur too often the patient's mind pieces them together, and makes a fairly definite picture of the labor, which makes for failure of the method in that case. For this reason the patient is kept in a darkened room, all noises are avoided and she is not touched any more than necessary. When the birth is at hand cotton is put into the ears, the eyes are covered tightly and the lights turned on and possibly a little chloroform given just as the head is born. In the vast majority of cases this is not necessary, a small dose of narcophin being given when the head is well on the perineum acting to hasten the perineal stage and reduce the probabilities of the patient awakening. Further difficulties are the development of Twilight Delirium. The patient becomes extremely restless and delirious and noisy, all of which they have no memory of later; but the maintenance of strict asepsis under these conditions is very difficult. Their faces are flushed, their mouths become dry and their pulse gradually increases in frequency. Another difficulty of real importance is the lack of use of the voluntary muscles in the second stage, often prolonging that stage beyond the limits of safety unless one is fully cognizant of the duration of that stage. One should determine its beginning by repeated rectal examinations which inform us just as well as a vaginal examination after a little practice, and avoids one other difficulty, the danger from sepsis from the numerous examinations which are necessary to intelligently follow the labor.

As regards the babies, most of them, if the patients have not been overdosed, breathe and cry normally. Some are in a condition of oligopnoea, they breathe once and then are blue and don't breathe until sufficient carbon dioxide is stored up to irritate their breathing centers and then they stretch and wake up and start to breathe. Some are asphyxiated, and this is chiefly seen where the second stage has been allowed to last too long. It is very difficult to differentiate between an oligopnoic baby and asphyxiated baby, so efforts at resuscitation should be employed in all babies, although the Germans tell us that all oligopnoic babies will come around if left alone. It is fair to assume that a still birth by Twilight is caused by either an over dosage with the narcophin or to a neglected overprolonged second stage. These are the difficulties which are the real disadvantages of the method and now for its advantages:

I. It is possible to remove the most of the suffering in childbirth from about eighty-five per cent of all cases.

II. There is easier and prompter dilation of the cervix and this is more marked in dry labor.

III. There is less muscular effort in the labor.

IV. There is no question that nervous shock is eliminated to the extent that these women feel and look much better than the ordinary case of labor, after the completion of their labor; predisposing to a more rapid and better involution.

V. It has been found that a larger percentage of these babies leave the hospital above their birth weight than after ordinary births, suggesting a better milk secretion.

VI. Less perineal tears occur because of the slow perineal dilation.

There are at least three contra-indications to its employment—primary uterine inertia, severe bleeding, and gross disproportion.

The drugs we use are narcophine—Berringer put up in one cc. ampules, containing $\frac{1}{2}$ grain of narcophine, which is equal to about $\frac{1}{6}$ of a grain of morphine. Narcophine is narcotine, morphine meconate, and is supposed to be less depressing to the respiratory center. Scopolamine must be in stable solution to be effective. Deterioration with the formation of apoatrophine is the cause for the production of delirium, according to Gauss. Professor Straub of Germany discovered that by using 10 per cent of manite for the solution, scopolamine hydrobromate remained stable. This is the solution we use put up in 1.2 cc. ampules, each cc. equalling 1-200 grain of scopolamine hydrobromate. The Hoffman, LaRoche Co. supply these ampules in boxes of a dozen. The dosage we use in an average case is about as follows:

In a primipara, when the cervix is two fingers dilated and somewhat thinned and in a multipara, so soon as labor is fully determined to be started, a hypodermic dose of $\frac{1}{2}$ grain of narcophine and 1-130 of a grain of scopolamine is given through one needle puncture. In from three quarters to an hour, a second dose of 1-200 of a grain of scopolamine is given, and thereafter 1-400 of a grain of scopolamine is necessary at intervals of an hour to an hour and a half, with no more narcophine except in a patient who is extremely lightly under, when we give $\frac{1}{4}$ of a grain when the perineal stage is thoroughly established to prevent the patient coming out just as the head is born.

A brief summary of twenty cases of Twilight Sleep at the Methodist Episcopal Hospital and the Jewish Hospital in my service which I have personally observed is as follows:

Number of cases Para I.....	16
Number of cases Para II.....	2
Number of cases Para III.....	1
Number of cases Para IV.....	1

PRESENTATION.

Vertex	18
Breech	2

DRUGS—SCOPOLAMINE.

Smallest total amount	$\frac{1}{80}$ grain
Largest total amount	$\frac{1}{30}$ grain
Average total amount	$\frac{1}{50}$ grain

NARCOPHINE.

Smallest total amount	$\frac{1}{2}$ grain
Largest total amount	1 grain
Average total amount	$\frac{3}{4}$ grain

Chloroform used in eight cases.

Pituitrin used in one case.

MEMORY.

Complete analgesia in sixteen cases.

Partial analgesia in four cases.

Complete amnesia in five cases.

Partial amnesia in five cases.

LABOR.

Average duration of first stage	16	hours
Average duration of second stage.....	4	hours
Longest duration of first stage	37	hours
Longest duration of second stage.....	8¾	hours
Average duration under Twilight Sleep	7⅝	hours
Longest duration under Twilight Sleep.....	35	hours
Shortest duration under Twilight Sleep.....	2½	hours

MODE OF DELIVERY.

Spontaneous	14
Low Forceps	4
Podalic Version	1
Breech Extraction	1

Placenta.—All delivered in 15 to 20 minutes by slight pressure on fundus.

PERINEUM

Number of cases with lacerations	7
Number of cases with no lacerations.....	13

Mother after Delivery.—Condition good in every case. One had a slight postpartum hemorrhage. All went home on twelfth or thirteenth day.

Child after Delivery—Asphyxia.—Slight in three cases; marked in one case. The rest breathed spontaneously. All nursed well.

Conclusions.

I. Twilight sleep is a scientific possibility in 90 per cent of women.
 II. It is so delicate and exacting a procedure that it is likely to be employed very little outside of a hospital.

III. It is not a panacea for painful childbirth; in that it is not practical for use by the general practitioner, because the remuneration for the average obstetric work is too low to permit him to undertake so arduous and time killing employment, if he is to exist and maintain his position in the community.

IV. Everyone who intends to employ this method of narcosis should observe several cases in the hands of experienced men before he undertakes it; in the interests of his own reputation and the safety of his patients.

SEWAGE DISPOSAL ON LONG ISLAND.*

Linsly R. Williams, M.D.,

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 New York State.

MR. PRESIDENT and members of the Suffolk County Medical Society: I want to assure you that it is a great pleasure to me to have an opportunity to meet the members of the society, which I have not had before. I have not prepared, as you will note, an elaborate paper on the topic assigned to me. It has seemed to me that we might get a little further by discussing things informally than we could by reading a definite paper.

* Read before the Annual Meeting of the Medical Society of Suffolk County.

The question of sewage disposal on Long Island, and the need of it, is a pretty elaborate program, and it is one which I cannot attempt to go into at very great length. I assume that in giving me this title the Secretary had in mind chiefly Suffolk County, not Kings, Queens and Nassau, because Kings, Queens and Nassau have needs quite peculiar to themselves in regard to sewage disposal, and quite different from the situation in Suffolk County, so the few remarks that I want to make will be applicable to Suffolk County rather than to the Island as a whole.

It seems rather obvious to those of us who are looking for everything that is better in the way of health and in the way of cleanliness and decency, that streets must be kept clean and nuisances must be avoided. We know that we at times spend more for relief from a nuisance than the nuisance damages us. We know that people do not like to have streets unclean, and if a little garbage is left in one of our city streets there is an immediate outcry, and everybody says it is a menace to public health, though just exactly what the menace is and just what harm it may do to health, no one has been able to definitely prove; but at all events the people demand that the streets be kept reasonably clean. In the last fifteen or twenty years people have demanded that not only streets, but also rivers and bays and other water courses be kept reasonably clean from sewage pollution. We may marvel as we look back fifty or sixty or one hundred years, when we realize how primitive the habits of most of us were who lived in rural or semi-rural districts, in villages and small cities, where all the water was procured from a well or a town pump or cistern, and where all the sewage was disposed of in the crudest possible way. Think of the few ordinary conveniences which the farmer has at the present time. It is astonishing to go abroad and see some of the more primitive cities there: I remember one famed city in Sicily, noted for its scenery, beauty, and climate. I remember very distinctly my first impression of the city, waking up on a glorious morning, thinking what a wonderful, heavenly spot it was, and walking down the main street of that village of three or four thousand inhabitants and seeing the inhabitants of both sexes performing their morning functions on their main street, resting their back against the front of the houses.

The amount of illness in that city, so far as I could learn, was not any more than it was in other cities in Italy. They seemed to suffer more from malaria than they did from typhoid fever or dysentery. But that was a thing that was perfectly astonishing to an American, to see that primitive condition existing in the street of a village of five or six thousand inhabitants. Now, that condition, of course, existed to a more or less degree in this part of the world, and not so many years ago. Conveniences were put in, I assume, a good many score years ago in the nature of privies, and these were often found to be considerable distances from the house. As people began to have more money and demanded more in the way of luxuries they put in cesspools or earth closets. These proved satisfactory provided one was willing to keep them clean, and see that they were properly cared for; but the burden of the care was left upon the individual property owner. Then as the community enlarged and the community spirit increased the people were willing to join together and build a sewer system.

After their sewer system was built the natural thing was, where feasible, or where it seemed in any way proper, to take that sewer to

the nearest water course, and that was the end of it forever after, until the modern bacteriologists and sanitarians investigated and began to show that that was not the end of it.

Now, when you begin to talk about the public health need of a sewer system, you rather have to stretch your imagination a little, because it has not been shown that the death-rate in cities and villages unsewered is so very much higher than in cities and villages which are sewered. But a definite proposition has been made by a certain number of engineers that whenever a city is properly sewered during the next year a diminution in the death rate, not only from typhoid fever, but tuberculosis and other diseases, takes place; and I don't think any one has satisfactorily explained the reason for it. If you stop to consider the death rate from tuberculosis as having diminished because a sewer system was put in, the first thing that strikes your mind is the possibility that tuberculosis may be contracted through drinking water. Then if you stop to consider the length of time which a tuberculous patient lives with tuberculosis,—you know that it is a matter of three or four years—and that the new patient who developed the year before won't live any longer because the new sewage system was put in—it is hard to conceive that that would be possible, and you would think that the person who developed tuberculosis during the previous year would live over a period of two or three years just as they did the year before. In other words, granted that tuberculosis is a comparatively long disease, there is no reason to assume that because you stop the incidence of tuberculosis or decrease it, the death rate will diminish that year as the result of the improvement of the water supply. I do not think that I made that quite as clear as I want to, but it does seem if you have a disease that lasts three years you had to have your causation diminished or entirely removed for a period over three years before you can expect a complete diminution from that disease.

Now, for the chief reasons why any village should have a sewer system and a sewage disposal plant: First of all, methods of ease in domestic economy. It is much easier to handle sewage because somebody does it for them; there is no trouble about it; it is much more cleanly; it is odorless and it possesses so many advantages that people immediately begin to think of the need of having it, and they are ready to spend a certain amount of money for it. It does increase safety to a certain extent, and there is no doubt but that a good many epidemics of typhoid fever have been avoided by the proper installation of a sewage disposal system which is adequately maintained.

There is another peculiarity about Long Island which is quite different from a good many other localities. That is the sandy character of the soil and the configuration of the coast. The well itself gives an adequate amount of water in most of the places where one can dig for water, and if dug in close proximity to cesspools and privies there is always danger of contamination, and that contamination has existed in a large number of Long Island villages without any shadow of doubt. The configuration of the shore shows that the majority of the coast line of Suffolk County is indented with land-locked bays. That means that wherever there is sewage pollution in a land-locked bay it does not purify itself as quickly as if it went into a river which is running continuously, or even a river which has a tidal flow.

The question of the protection of tidal waters and the protec-

tion of the land-locked bays comes up with a great deal of interest. The bays are used for a number of purposes. They are used for pleasure, for boating, and for bathing, and they are used for shellfish culture, and these three things have a certain amount of value to the Long Island residents. In some of the villages in the bay these things alone probably pay a large amount of the taxes in the village, and they are responsible for the prosperity and success of the village. The value of the oysters and clams in some of those localities is particularly great, and I imagine, although I have not the figures at hand, that this is probably, in some of these smaller villages, the chief product, not exactly manufacture, but the chief commodity which is produced in that neighborhood. Growing oysters and clams seems to be the chief industry almost everywhere in the Long Island bays, and they grow very rapidly and they seem to grow just as well if a little sewage runs in close by, as if there was no sewage at all in the community. The clams seem to do just exactly the same thing. A large number of examinations have been made of the territory of Long Island, and a large number of examinations have been made of the oysters themselves. The first large examination was made in 1908, and I think if Dr. Pease had time he could tell you more about that survey than I could. But, particularly, that was a survey made by the State Department of Health of all the sewer outlets in the bays of Long Island,—an examination of a large number of the oyster beds and an examination of the oysters themselves bacteriologically, to see how much sewage contamination they showed. They showed uniformly where there was sewage pollution above the oyster and in the waters around, that the oyster itself was invariably polluted; that is, colon bacilli were present either in the shell liquor or in the body of the oyster itself.

The question therefore presents itself, is an oyster or clam which is grown in a sewage polluted water fit for food or improper for food? Some will tell you that it is improper for food and others will tell you that it is not. Some will say that it is improper but if you have those oysters drunk in clear water, in pure water, either salt or fresh, that in the course of a very few days the oyster will be entirely pure and wholesome and free from colon bacilli. I haven't made any experiments on this subject, but it is stated by good authority that fresh water will remove contamination. Others will say that no matter how pure the oyster is when taken from the bottom of the water, it is then placed in some creek which is polluted and the pollution there is far more serious than it is in the water where the oyster was originally taken. There seems to be no doubt of that proposition, that if the oysters are drunk in a creek just before sending them to the market they become more polluted than they were in the water from which they are taken and are much more liable to be contaminated with typhoid bacilli than they are elsewhere, because the dose of typhoid bacilli is so much greater than it would be in the natural oyster beds.

The suggestion has been made of two ways of avoiding the difficulty, one of which is to grow all oysters and clams in oyster beds and clam beds that are absolutely free from sewage pollution. The Conservation Commission of the State has the authority and power to ask the State Department of Health to examine and state what oyster beds are entirely free from contamination by sewage and are perfectly safe for oyster culture. The State Department of Health is about ready to define certain areas which are free from sewage pol-

lution. As luck will have it, and as it usually happens in these cases, it is found that the most available oyster beds are to a certain extent contaminated, and the beds from which the large crops come are also to a certain extent contaminated. Then the question is going to come up why are not these beds certified to as to their purity and take the oysters from those particular beds and allow them to be washed or drunk in clean salt water or clean fresh water and get rid of the colon bacilli in that way in these particular oysters, and certify that they are perfectly pure and wholesome? That seems a possibility. Others have suggested that even if the oysters are not cleansed in that way, that there may be some artificial means of killing the bacteria in the oyster by placing it in some fresh water tank, treating them a certain way, and killing all the bacteria in it. It remains for the sanitary engineers to show whether than can be done economically and safely; but the burden is on the State Health Department to say whether a certain bed is safe or not.

Further than that the State Department will not be able to go, will have to qualify any statement it makes, will probably get itself in plenty of hot water and receive a great deal of criticism from some of you gentlemen and a great many oyster growers down on Long Island. Some of the oyster growers would be perfectly delighted if some of the villages which empty their sewers into these land-locked harbors were compelled to put in a sewage disposal plant, and purify the sewage so that it will go into the bay a non-putrescible sewage, an effluent which is reasonably pure and supposed to have had most of the bacteria taken from it. The oyster men would like that because it would immediately give them a certificate that the oysters and the waters in which those oysters were grown were pure, and they would be able to increase their profits and the village where the plant was put in would have to pay the piper.

Now, it is just a question whether the oyster growers can bring pressure enough to bear on the trustees of the village to have them put in the money, and it is a question whether the inhabitants of these villages want to spend the money for the sewage disposal in that way. But it really has gotten down to a question in some localities "Are you going to put in a sewage disposal plant or are you going to allow your oyster beds to be put under the ban as not being suitable for use for oyster cultivation? This remains to be seen.

In closing I want to say one final word which I think is perhaps rather useless to say, but I am going to say it just the same. It must seem to all of you here, as it does to me, that every village, no matter how small it may be, if it is an incorporated village, can afford to put in some suitable means of disposing of its fluid waste. It costs very little more to the householder and it adds infinitely more to his convenience. It is so much more safe and so much more helpful in preventing nuisances on adjoining property, and will improve the general condition of the village. This thing applies not only to Long Island, but to all other places. For instance, Saratoga, famed as a health resort, has not an adequate system of sewage disposal, and they are rather inclined not to go into it, to spend the money to dispose of all their sewage waste. But the point is immediately raised, "Here, you gentlemen have a village which is known the world over as a health resort. You have got to be above suspicion; you have got to have your sewage well taken care of so that there shall be not the slightest shadow of danger coming from it." Now, the same thing is true in a small degree of practically every

Long Island village. The pollution is increased in the summer time. The people come not only from New York State, but from all the eastern part of the country to spend the summer, and they bring with them typhoid fever, dysentery and other diseases and put them in the villages, and if the germs of these diseases stay in the cesspools or privies, or earth closets, there is always a chance that they will get out of those places and get in the water supply, either directly or indirectly, and cause damage not only to the summer residents, but also to the people who regularly inhabit there.

I am sure the information that you gentlemen can use, the influence that you can bring to bear, especially those of you who are health officers in Long Island, will be of immeasurable value in developing a movement which is not only for public health but for common decency.

THE PROPHYLAXIS AND TREATMENT OF OTITIS MEDIA IN INFECTIOUS DISEASES.

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THE care of the ears during the acute infectious diseases is important and demands the closest attention of the pediatricist.

I think that too often they are neglected entirely or the seriousness of their involvement is not realized. Holt states that purulent inflammation of the middle ear is the most frequent complication of scarlet fever. Kerley states that it occurs in 10 to 30 per cent of the cases; while Barnhill and Wales place the percentage in some epidemics at $33\frac{1}{3}$ per cent. In measles the complication is much less frequent, most authorities giving the percentage as about 15 per cent.

Acute otitis media may occur in the acute infectious diseases in two forms; the catarrhal and the purulent. In the acute catarrhal form there is a congestion along the eustachian tube which results in its partial closure, causing rarification of the air in the middle ear. There is deafness with noises in the ears, and the ear drum may be retracted. There may be some congestion along the hammer handle and a serous exudate in the middle ear cavity.

In the acute purulent inflammation, there is an extension of the infection along the eustachian tube into the middle ear; although in some cases, according to some authorities, the infection is carried through the blood or lymph stream. In true diphtheria the ears are rarely involved, but in some of the severe nasopharyngeal cases there may be an extension of the diphtheritic membrane along the eustachian tube and into the middle ear.

In scarlet fever and measles, the streptococcus is the micro-organism usually found. In scarlet fever the purulent involvement usually occurs early in the second week or during convalescence; in measles, during the first or second week, seldom later than the third week.

The infection having gained an entrance into the middle ear, either through the eustachian tube or through the blood or lymph stream, there is the formation of pus with the following symptoms. If the infection occurs during the early stages of the disease

there may be no change in the already high temperature or there may be a slight rise; if during convalescence, there is usually a rise in the temperature. There may be severe pain in the ear, and restlessness lasting for a few hours or a day or two, followed by a discharge of pus from the canal and relief from the pain; or there may be a small amount of discharge, but not the expected relief from the pain. In the first case, the perforation being large, allows free drainage from the middle ear; while in the second, because of the small opening in the drum, the pus is still retained under pressure. The patient may complain only of a feeling of fullness or noises in the ears, or there may be no symptoms referable to the ears until a discharge from the canal is seen. Examination will show the drum red, congested and slightly or decidedly bulging in the posterior half, with most of the landmarks obscured. Or the drum may be bulging and of a dull gray color. This gray color is caused by the outer layer of the drum that has been thrown off but still remains in a position covering the drum. If this is wiped away the congested drum is found underneath. If there is a discharge of pus from the canal it may be found, after the ear is syringed, that, although there is a perforation the drum is still bulging. This is due to the fact that the perforation is too small to allow free drainage of the middle ear cavity.

The catarrhal cases usually recover entirely but the congestion may continue for some time. In the purulent cases, the ears may, under proper treatment, discharge for a few days or several weeks; the discharge cease; the drum heals; and the ear returns to a practically normal condition. The infection may be severe, leading to the destruction of most of the drum and possibly some of the ossicles. In these cases the discharge may, after long treatment, cease, and the patient be left with a healed but badly damaged ear. Or, what is more probable, the discharge may persist or return at intervals throughout the patient's life, a constant annoyance, a cause of deafness, and a source of danger. The infection may be very severe, or the treatment delayed or inefficient, allowing involvement of the mastoid in the purulent process, with the possibility of its complications such as sinus thrombosis, meningitis or brain abscess.

PROPHYLAXIS AND TREATMENT.

Something, but very little, can be done to prevent involvement of the middle ears; but much can be done in their treatment. As the infection passes from the nasopharynx along the eustachian tube, the first thought would be to keep the nasopharynx clean. This cannot be done, but if the child is old enough or easily managed, an alkaline solution may be used, in an atomizer, or dropped in the nose with a medicine dropper, holding the head back until the solution reaches the nasopharynx. This, followed by a mixture of menthol and camphor in a mineral oil used in the same way, may remove some of the secretion and lessen the inflammation in the nasopharynx to a slight degree. But if the child struggles and resists the use of the alkaline solution and the atomizer should be omitted, and only the menthol and camphor in oil, dropped in the nose with a medicine dropper, should be used. In the cases of nasopharyngeal diphtheria, where it seems necessary because of the large amount of secretion to cleanse the nose, the child should be laid on the side with the head over the

edge of the bed, and with a small syringe the solution should be gently forced into the upper nostril and allowed to flow out of the lower one. Never use a nasal douche! It is a positive danger and very apt to cause infection of the middle ear. The patient should not be allowed to blow the nose forcibly, but should blow it into the handkerchief, while both nostrils remain open.

The examination of the ears should not be postponed until the patient complains of pains, a discharge is seen in the canal, or a swelling appears behind the auricle. The ear drums should be inspected daily, or, at the longest interval, every other day. A head mirror and speculum, or a speculum carrying an electric light, should be used. At the first appearance of bulging of the drum a free incision of the bulging portion should be made. By making this incision under nitrous oxide anesthesia a much better operation can be done, the patient suffers no pain, and his future trust and confidence in you are not shaken; an item that makes the further treatment of the case much easier. After the incision the ear should be syringed every two hours, using, each time, a full pint of a boric acid or a weak carbolic acid solution. When syringing the ear, the canal should be straightened by holding the auricle back or down, depending upon the age of the patient. The point of the syringe, either a two ounce soft rubber one, or a fountain syringe to which a medicine dropper has been attached, should be placed well in the canal, and the solution forced in rather hard in order to remove the discharge from the depth of the canal. No cotton should be worn in the canal while the ear is discharging. If a discharge appears in the canal before the drum is incised it probably means that the drum has ruptured, but it does not mean that the drainage of the middle ear is sufficient. The ear should be carefully examined and, even though a perforation of the drum is found, if the drum is bulging it should be incised and the ear syringed. The mastoid should be watched for tenderness and if mastoiditis develops an operation should be done early.

Only a full realization of the dangers of an otitis media and the damage that it can do to the ear in a very short time, and what damage may mean to the future welfare of the patient, will lead to an appreciation of the importance of the proper care of the ears during the acute infectious diseases.

Alderton states that of 178 cases of scarletinal middle ear suppurations, observed by him at the Kingston Avenue Hospital, 26 per cent needed the mastoid operation, with a mortality of 25 per cent. Of 326 cases occurring in measles, 10½ per cent required the mastoid operation, with a mortality of 29 per cent. This high mortality he attributes to the lung complications, especially broncho-pneumonia, and not to mastoiditis, or to the operation.

According to Bezold, deaf-mutism is caused by cerebro-spinal meningitis in 31.8 per cent of cases; cerebral processes as a whole, in 51.9 per cent; scarlet fever, 18 per cent; measles, 2.1 per cent; diphtheria, 1.7 per cent.

Politzer, quoting Lemke, gives the following as causes of deaf-mutism; various affections of the brain, 38.7 per cent; scarlet fever, 24.4 per cent; measles, 8.3 per cent. The inflammation of the middle ear during an acute infectious disease may effect the entire future life of a patient. As he grows older, he may find that he is hard of hearing or possibly totally deaf, and in many lines of

work and many pleasures he is greatly handicapped or even excluded from them. He may recover from his measles or scarlet fever with an ear that will discharge at intervals or continuously throughout his life. It will be an annoyance to him; but more than that, it will be an absolute danger.

. During any of the acute infectious diseases the heart is regularly examined to detect any weakness of its muscle or any of the valves; the urine is examined to learn if there are changes taking place in the kidneys; and the lungs are listened to to detect any congestion or inflammation. When the patient is well, if it is found that the heart is weakened, or the kidneys damaged, the parents are told of it, and cautioned that the patient must be careful; must not exercise vigorously; or must not eat this or that. They are told that possibly during the entire life the patient must be more or less under the doctor's care.

As much should be done for the ears. They should be examined daily, and treated promptly. The duty of the pediatricist to his patient does not cease with the disappearance of the rash. If there is still a discharge from the ears, they should be treated for weeks or months in an effort to stop it. If there has been a discharge and it seems to have stopped, do not be satisfied until the ears have been carefully examined, because there is often a slight discharge that collects in the depths of the canal but is not enough to appear externally. The dangers of a discharging ear should be carefully explained to the parents, and they should be told that, during the rest of the patient's life, the ears should be treated or, at least, inspected, at regular intervals. If, later, it is seen that the patient is deaf, he should be placed in a school where he can be instructed in lip reading. If this is done when he is young, he will, when older, be in a position to earn his own living, and not be a charge upon his relatives or the state. He will also find that he is able to enter into many of the pleasures of life that, without this instruction, would be closed to him. Only when we have done this, have we done our full duty by our patients.





EDITORIAL



WAR.

TO those who were fortunate enough to hear Professor Crampton's address on the Biological Significance of War at the Long Beach Meeting of the Associated Physicians, there was opened up a vista that shows the need for a fuller discussion and popularization of the subject which is of such present importance. The scope of Professor Crampton's remarks precludes any detailed report and it is a matter of regret to the JOURNAL that Professor Crampton himself felt that he could not at this time prepare a syllabus that would fairly represent his arguments in brief; but one may at least epitomize his remarks by saying that beginning with the lowest forms of animal life he showed how combination and co-operation increased efficiency and well being of individual and community alike and later demonstrated that the effect of war is rather to lower the virility of a nation than to increase it; his remarks being in direct controversion to those of General Bernhardt, who has endeavored to prove Treitsche's contention that war is beneficial. Later in the evening Dr. L. S. Pilcher delivered a most finished address on the Victories of Peace. Dr. Pilcher seemed to reach the conclusion that patriotism, self denial, uprightness and the civic virtues blossomed out of warfare, whereas times of prolonged peace seem to foster selfishness, luxury, the pursuit of pleasure and religious and moral decadence. One may with profit compare with these seemingly opposite views the essays for and against war with which the contemporary press is filled. As old Sir Roger de Coverly said, "much may be said on both sides," for the arguments from both points of view seem convincing. It may not be amiss to emphasize here some points of practical importance arising from the general discussion and particularly pertinent to conditions prevalent in the United States today. One of Bernhardt's contentions is that a state of preparedness for war, as calling upon the young men of the country to be in readiness for military service, raises the standard of education as the efficiency of the army is raised, and thereby improves both the physical and intellectual condition of the young men whether in the army or not. It seems to be a matter of common observation that the younger generation in this country at least care far more for the pursuit of pleasure at any cost than they do for self denial, moderation and discipline. It is further interesting to note that in a country of one hundred million people the proposed increase of the standing army to one hundred thousand has after two years shown an enlistment of but ninety-seven thousand, and it is not too much to infer that this low enlistment is in large part due to a feeling that professional military service is in some manner disgraceful; indeed strong protests have come from recruiting officers against a custom indulged in by some magistrates of suspending sentence against offenders if they will promise to enlist.

While there is no present urgent need for a large army because

of our geographical defences, the proposition that a state of preparedness is the best precaution against war seems a convincing argument and it is an unquestionable fact that if this country were called upon to put an effective army in the field, it would require months to train and equip men to be anything but an armed mob. Personal observation has convinced the writer that among the most desirable applicants for positions in the New York Police Department are those young men who have been trained in the Army and Navy, and judging from such experience it would seem that an immense benefit to the country at large would accrue could such a training be made general, for the first task after enlistment is to learn self restraint, self restraint in its turn brings self confidence and self respect and what the drill master fails to teach, the rough experience of the barracks supplies. If it is true that a college training is as valuable for the hard knocks by which one's classmates polish off too salient angles and too glaring self conceit, it is equally true that the daily contact with one's fellows in the ranks helps to carry home the same lesson in much the same way.

There is also need for growth in the Army Medical Corps, a field that offers for the average man opportunities that do not seem to be fully realized, such as a steady income, an assured position and a regularity of life impossible in private practice, to say nothing of opportunities for acquirements such as have produced men like Walter Reid, Gorgas, Craig and many others. The present arrangement by which a commission in the non-active list of the Medical Reserve Corps may be exchanged for work in the active list, while theoretically excellent, is not to the full advantage of the Service, which needs men specially trained and equipped for active service on short notice. The peculiar needs of active Army Medical Service must be experienced to be appreciated and for that reason the Army Medical Corps should be very largely increased with men who may serve short terms in order to gain the practical experience demanded and who may then be placed upon the non-active list where they can be called upon for emergent service.

The field is so broad that volumes could well be written on each of the features just indicated. It is earnestly to be hoped that the advantages to the country of rational military service may not be lost sight of and that the present agitation for an army increase will arouse a popular appreciation of the ultimate good that will flow from the passing inconvenience of military service.

H. G. W.

DEPARTMENT STORE OBSTETRICS.

ONE of the well known department stores of New York City has been recently advertising public conferences on the much discussed question of Twilight Sleep. One advertisement in particular announces that Mrs. Blank will discuss her personal experience and Dr. Blank, of a hospital that shall be nameless, will speak. The day previous a similar programme was offered the public and has doubtless proven a catchy method of attracting trade. One of the speakers, a woman, at one of these meetings, is quoted as declaring that if women want Twilight Sleep they must fight for it themselves as the mass of doctors is opposed to it. This whole subject has blazed up like a prairie fire that demands the most thoughtful attention of the medical profession of this country. When a woman of but one experience, and

that purely subjective, can make a statement like the one quoted, when physicians presumably reputable lend themselves as a side show in order to help sell millinery, lingerie and notions, when in short the science of obstetrics can be displayed on the bargain counters of a department store, it is time that rational, thoughtful, conservative people of all kinds wake to a realization of the mental state of this country. We have been steeped in money until we have lost sight of the sterling virtues. The cheapest shop girl feels that she is privileged to dress beyond the wildest dreams of the governor's lady of four generations ago; the family that does not own an automobile is below social notice; the woman who cannot boast of at least one operation need not expect to move in polite circles; in a word, financial and intellectual extravagance has swept the people of this country from the paths of common sense until they are craving something new, something startling, hourly to titillate their jaded palates. In this particular instance the fact has been lost sight of that Twilight Sleep must fulfil two requirements before it can be accepted at all; it must be proven absolutely safe for the mother and absolutely safe for the child in every case before it can be accepted as universally applicable in obstetrics. Further, the man who employs it must—and this cannot be too strongly insisted upon—serve an adequate apprenticeship before he can be trusted to use it. Unless these essentials are generally appreciated there will be a record of infant fatalities and of maternal accidents that will throw this method into a disrepute that it does not deserve and be responsible for a number of preventable deaths. The matter must receive the public attention of the medical profession speaking through well authorized channels in no uncertain way *now*, before too much harm is done. And, by-the-bye, what do you think of these department store obstetrics anyhow?

H. G. W.

THE SURGEON'S INTEREST IN END RESULTS.

IT is safe to say that the great majority of those patients who pass through the hands of surgeons by reason of conditions that permit of reasonably prolonged study from every point of view, including consideration of ultimate economic, physical and moral results of operation, achieve what they hope for—comfort, health and efficiency sufficient to offset the risks, pain and loss of time and money entailed. There are still, however, altogether too many patients who might better have endured their ills as best they could and avoided operation. We might put this another way and say that surgery in many such patients should have been avoided by the surgeon. The patient is supposed to determine operation for himself, after things have been explained to him, but as a matter of simple fact the surgeon dominates the situation, necessarily. The surgeon's responsibility is very great in these matters, but his accountability is apparently slight, except when he chooses voluntarily to account with himself and study the results of his work to that end, or else to account with the profession and publish final data. When he occasionally does the latter bias is often discernible, usually revealed in his confident assurance that the cases which he has been unable to trace must have been successful in their outcome, else, he ingenuously remarks, they would have sought his help again. We may be wrong, but we fancy that here as elsewhere the human nature of the unlucky ones asserts itself and relief is sought at the hands of other surgeons, if it be sought at

all. Indeed, every general practitioner is familiar with this class of cases.

The failure of Cullen, of Baltimore, to secure anything like full data in respect to the end results of radical operations for uterine cancer from the surgeons to whom he appealed is a significant fact.

But how much interest has the average surgeon in his end results? Most practitioners sincerely believe that he has a very keen interest in them, yet how seldom is the physician interrogated as to the final outcome of his referred cases, after their return to his hands. The practitioner himself does not report the wholly unrelieved or aggravated or grievously complicated cases in his care, for they are not conceived of as interesting, in the sense that they were primarily. And probably nothing would be gained by such reporting, as a general rule. For our naïve practitioner would not present any of these cases as avoidable instances of failure, wherein good judgment and reasonably wise foresight were not to be descried in the operators. And if he did, his *ex-parte* judgment of such cases could be easily attacked, or at least reasonably and in good faith questioned. He therefore feels that he has but little reason for presenting them, and, moreover, usually feels instinctively bound to extenuate and defend, even in flagrant instances, leaving a rôle calling for unimpeachable talents, acknowledged wisdom, unquestionable fairness and kindly yet powerful recital, characterization and appeal to the Beverley Robinsons. And these issues may safely be left in the hands of such compelling advocates. Safely, too, in the hands of the surgeons themselves. The fascination and demands of new cases and new problems, enormous as they are, do not wholly engage their minds. Some day they will concern themselves with economic and other bearings not less than with the acquisition of extraordinary skill. This should come with the awakening we are witnessing to-day in respect to all the vital sociological concerns of the people. It is not a question of humanitarianism of the hackneyed, sentimental sort, so much as it is a question of efficiency, or of justice, or of science, or even of enlightened selfishness, if you will. For, strange to say, the wholly materialistic conception of life expounded by Jacques Loeb promises a more rational treatment of the ethical problems of mankind, if a less spiritual one, than that which is founded upon the old vitalistic conception. Medical men should be especially inspired by it.

A. C. JACOBSON.





Society Transactions



TRANSACTIONS OF THE KINGS COUNTY MEDICAL SOCIETY.

Regular Meeting, October 20, 1914.

The President, Dr. J. RICHARD KEVIN, in the Chair.

Paper: "Twilight Sleep: Its Advantages, Its Disadvantages, Its Diagnosis, and the Technic." (*See p. 455.*)

By John O. Polak, M.D.

DR. RALPH M. BEACH, in opening the discussion, said:—"I can only substantiate everything that Dr. Polak has said about the twilight sleep. We started in with twilight sleep at the Jewish Hospital the same time as the Long Island College Hospital and I can say frankly that the more I see it the more I am impressed by it. That is, to me twilight sleep is a reality.

"Dr. Polak struck the keynote when he said that the individualization of the patient was the all important thing. A schedule cannot be laid down. What is the right dose for one is not the right dose for another. We have recently been following the plan of giving small doses. I think that we have given even smaller doses than Dr. Polak has given. We have had a few cases where there have been a few "isles of memory," but in general we have had amnesia in all of our cases.

"We have felt in all our cases that the memory test was very important. By this I do not mean the memory test of asking the patient whether she remembers seeing objects, but instead we make it a custom of asking the patient whether she remembers the doses that have been given. We ask them how many hypodermics they have had and we find that the results obtained are excellent. In some cases where hyoscin was given, we used the same test as with scopolamin and the women remembered every injection and each thigh it was injected in. We do not recommend hyoscin.

"We also feel that while these women are going into this twilight state it is important to talk to them and quiet them as much as possible. There are a certain number of cases where the people are excited, and we have minimized this by talking to them as they are going under. I say to my private patients when they have a pain that they should keep quiet and not cry out, but to just grit their teeth together and not make any noise, and our experience has been that they go through the twilight state without any noise or excitement.

"Dr. Polak has gone over the advantages to the mother: First of all, she has a painless labor; secondly, she does not have the nerve exhaustion of the ordinary woman, and is able to get about on the third or fourth day.

"We have also found that the milk secretion has been absolutely better in these cases.

"In cases at the Jewish Hospital we have analyzed the weights of the babies on discharge. About 80 per cent left the hospital on the eleventh day above their birth weight.

"The point which the doctor brought out about the saving of the cervix is to me one of the greatest advantages of the twilight sleep. The first stage is definitely shortened. I have made it a special point to examine these primiparæ on leaving the hospital and have found the cervix almost intact. It will certainly make less work for the gynecologist.

"Another advantage is when you are dealing with a nervous woman and she cries for forceps and the family ask for something to be done. This is all obviated in the twilight state.

"I think that more than half of the forceps done today are done through incompletely dilated cervixes. Now, in twilight that will not be the case. We have fewer lacerations. Cardiac cases stand it better. In Freiburg they claim also that there are less puerperal psychoses following twilight deliveries.

"Another thing: there is no reason in my mind why we should not have better babies with this method. The better classes of patients are going to have more babies.

"In the past month I have had six or seven women of the better class come to me and inquire whether twilight sleep was a reality at the present time. Today the people understanding the prevention of conception are for the most part the better and middle class of people. The poor people do not understand anything about prevention of conception and they are raising the large families.

"Any bad results of twilight sleep are due to pushing the dosage too fast. If a patient does not respond to twilight, the dosage should not be pushed. In multiparæ coming into the hospital late the dosage should not be pushed.

"With regard to the question of forceps delivery in twilight: some men say to me when they see me have a twilight case and then do a forceps case, that the twilight is a failure. They get the impression that it is a failure. Now that is not true. We have to realize that a certain number of women are going to have forceps, twilight or no twilight. There are a certain number of women with slightly contracted pelves who are bound to have forceps. We must not lose sight of that because if we give them too long a second stage, those babies aspirate mucus and they give us further trouble."

DR. DICKINSON:—"I have not been twice to Freiburg. I have not been four times in close contact with Professor Krönig and Gauss without having received very definite impressions. Such visits to the clinic are too brief to gather from them any conclusions of the value to you that is embodied in these papers written by Americans, like Dr. Polak, and based upon a large number of cases in their own services.

Coming back from Freiburg two years ago we made some imperfect attempts to test the method, but no systematic study was carried out at that time. Improvements in results seem to have been attained since then in Freiburg and a much better impression was made at this second visit. (Brooklyn seems, by the way, to have had more representatives at Freiburg than any other city.)

There are two or three very definite things that the profession should bear in mind. When a Friedman cure or an Amick cure or some other such newspaper hysteria has spread abroad we do not feel ourselves driven to action as we do in this matter of painless labor. We are in this position: the expert must carefully try out this thing for us and a general application on the part of the profession is not to be thought of until the expert tells us what is safe and what is not safe. A clinic like that in Freiburg is not in a position to get sweeping credence from us because it is carried away by its own enthusiasm. They have, for instance, grouped in their series of cases those early ones in which morphin was given in such a way that it jeopardized the life of the child. That jeopardy was the reason that we threw Dämmerschlaf over on its first study here several years ago (1908). As I have said, the work seen this year was an improvement on that of two years ago when at least one of the women was belladonna crazy and aseptic technic went to pieces.

Specialties as they develop become more intricate. Refinements make new demands. Finished workmanship calls inevitably for more time to be devoted both to training and to the individual case. And more training and more service mean an increase in cost to hospitals, a larger fee for the private patient. No more striking example of this can be quoted than twilight sleep. The public demands it. How can hospital and practitioner furnish it at reasonable cost? Can we lay down some definite rules for the present practice? I think we can.

Labors group themselves as follows in relation to twilight sleep. Those to be excluded are:

First, a certain number of labors are not grievously hard and do not need it.

Second, others are too short for this treatment. For narcophin and morphin not eliminated in four hours or thereabout poison the child.

Third, eclamptics are not suited to this method.

Fourth, the woman who cannot pay to be steadily watched, and will not go into the hospital and who is not within reach of a teaching institution, cannot obtain the skilled attendance necessary for this method. Thus most of the poor are barred out under the present conditions.

Those who can be cared for comprise:

First, women who enter a sufficiently equipped hospital service. These can be properly treated whether they be poor or rich, provided the institution will pay for extra internes and nurses.

Second, the well-to-do in private houses who will pay for special attendance. Such attendance involves one of four things:

- a. Attendance practically throughout the labor by the obstetrician. The cost will be high, for he will be forced to give up everything else for a day at a time.
- b. Assistance by a younger obstetrician who will stay with the patient.
- c. Twilight anesthesia conducted by an anesthetist of the regular specialty or from a new group particularly devoting itself to this work.
- d. "Twilight" by the nurse fully trained to this work.

Gentlemen, I think that twilight sleep marks one step further toward the obstetric inevitable. What do I mean by this? I mean that the man with special service and training is the only one who ought to take care of a primipara. The general practitioner is welcome to the multipara, but the day is coming when the primipara will consider herself a woman who needs expert care and, until she does, obstetrical wrecks will abound. The forceps belong to this specialist. Twilight sleep belongs to this specialist. We will have trouble, we will have grave trouble—including law suits—unless we go slowly and carefully, and do not let the public drive the practitioner and the man untrained or imperfectly trained beyond what he is qualified to do."

DR. JOHN O. POLAK, in closing the discussion, said:—"I have nothing to add but a word of warning. Do not understand from this paper which I have presented to you and from the limited number of cases that we have reported with the fortunate results cited, that we believe that twilight sleep is safe and is a panacea in all labors. We do, however, believe, with Dr. Dickinson, that there is a definite field for painless labor, in certain types of women and in these certain types of women, from our limited experience, there has been a definite advantage from the use of this analgesia. Furthermore, I want to say to you frankly that it is only by repeated experience that any of us can gain a thorough mastery of this particular drug method. Both of these drugs are dangerous and from my own experience, when I came back, in the first few cases and from my resident's experience in his first few cases, comparing that with what he can do at the end of his service with the same drugs in less than half the dosage, I am sure it is a matter that takes experience of the man, whoever he may be, and if he is conscientious he can get that experience if he has any obstetrical sense. It should not be used in contracted pelves, except to allow the woman the proper test of labor; it will not overcome our obstetrical difficulties, but it will do one thing and that is it will produce dilatation of the soft parts and will make obstetrical procedures more favorable, provided we all learn that the obstetrical indications in the particular case are not influenced by this drug treatment."

TRANSACTIONS OF THE BROOKLYN SURGICAL SOCIETY.

Regular Meeting, May 7, 1914.

Further History of a Case of Cholelithiasis and Gastric Ulcer. Patient.

Roger Durham, M.D.

The first portion of this history I read at a previous meeting about three years ago, and I will repeat briefly.

This was a maiden lady who gave her age as 36 years when she first came to me, but a year later she gave it as 49 years. She first came to me June 15, 1911 (nearly three years ago). She had given a history covering five years which suggested a gastric ulcer. Four weeks previous to admission to the hospital she had sharp epigastric pain before meals, but no vomiting, and for three weeks she had had sharp pain after eating, lasting two or three hours, situated below the ensiform cartilage. She had vomited some food. She was not very constipated, and there was no blood in the stools. She had lost some weight due to her poor eating, and was poorly nourished. Examination was negative except for a tender spot below the ensiform cartilage, with slight rigidity over the right upper rectus region.

She was admitted to the medical service and was treated there for six weeks and went away improved with a diagnosis of gastric ulcer.

On March 24, 1912 (about ten months later), she came back to the medical service and said that she had been well for about two months after treatment there, and that now the symptoms were returning with pain after eating, lasting

two to five hours. She had slight nausea and vomited at times. There was no jaundice. She had gas and constipation. Her complexion was of an olive color. There was decided emaciation. She was tender over the gall bladder, and up toward the ensiform cartilage. There were no masses. A diagnosis of either cholelithiasis, or gastric ulcer, was made. She was transferred to the surgical service April 5, 1912. This time a cholecystotomy was done, and a large number of gallstones was removed, and one through an opening in the cystic duct. No bile drained after this operation. The patient was discharged on May 2d and had been in the hospital about a month.

She remained well for about five months, and then returned to the hospital (that following November), having complained for six weeks of what appeared to be a typical attack of gallstone colic, with pain over the gall bladder and running around the body to the shoulder on the right side. She had vomited and was constipated. These attacks lasted two or three days. I opened her over the gall bladder and separated some adhesions. That was the only thing found, and the transverse colon was sutured up close to the gall bladder to prevent the formation of more adhesions. She was discharged on January 12th, after she had been in the hospital for six weeks. That was in 1913. The following April she came back with a history of having had pains of a cramp-like nature for two weeks, shooting up into the left hypochondrium. She remained in the hospital a short time (a week) and was discharged cured. A diagnosis of more adhesions was made.

On June 9th she returned to the hospital in the medical service with pain in the upper abdomen, especially at night, and coming on after eating, with vomiting. She had some jaundice and clay-colored stools from time to time, according to her statement. She then weighed 83 pounds. She was treated in the medical service and a diagnosis of achylia gastrica was made, for want of something better, and she was discharged in the early part of July of last year (1913).

She returned September 30th of last year. This was the seventh time she had been admitted to the hospital. At this time she had attacks of epigastric pain, more frequent than they had been, running through to the back, bearing no relation to food. She had vomited occasionally. Her stools were dark but at times they were clay colored. She said she was jaundiced at times and she had great tenderness beneath the ensiform cartilage, in the pit of the stomach.

She came in on October 10th for operation, and the old incision was opened and the gall bladder was exposed. The gall bladder looked fairly normal and contained no bile. A cholecystectomy was done. It was a difficult operation because the adhesions were dense everywhere, and to expose the upper abdomen it was practically necessary to go through these adhesions and expose the gall bladder before anything further could be felt; and then by passing the finger around toward the stomach, an indurated area could be felt in the stomach wall. After considerably more effort at separating adhesions, I succeeded in exposing the stomach, which was adherent to the under surface of the diaphragm, to the abdominal wall and also to the transverse colon. I made a small opening in the stomach and in passing the finger in I felt an excavated gastric ulcer on the posterior wall and adherent to the under surface of the diaphragm. This I exposed finally, separating dense adhesions between the diaphragm and stomach, and removed this large gastric ulcer, about one-third the size of the entire stomach. I simply clamped and cut the ulcer away, which, with its base, was at least three and a half inches in diameter, and then closed this up and placed the stomach under the diaphragm, where it had been before, to aid in preventing leakage.

This operation had taken considerable time and it seemed as if the ulcer was far enough away from the pylorus to allow drainage of the stomach, but after four or five days, when the patient began to take food, she had persistent vomiting. At the end of two weeks a gastroenterostomy was done, which had to be done through the anterior wall, as the organ was fixed by adhesions; but she went through the operation nicely, and had no more trouble for two weeks. At the end of that time she began to vomit again, and a diagnosis of intestinal obstruction near the lower end of the ilium was made. I made a low incision in the median line, and found a dense band of adhesions as large as a finger, which cut in an exceedingly tough manner and had surrounded the small intestine near the cæcum. I divided this band of adhesions between two ligatures and the gut promptly became distended; the patient was returned to her bed and the bowels began to move, and from that time on she steadily improved. She weighed at this time (December 1st last), 67¾ pounds. She was put on doses of mineral oil three times a day and two or three teaspoonfuls of agar, and every time that she became constipated she was given a large dose of castor

oil, which had to be repeated every ten days. She was discharged from the hospital on April 2d, when she weighed 83½ pounds, so that she had gained about 16 pounds.

Since leaving the hospital she started in scrubbing floors and caring for fourteen children in a home, and now she is in the children's ward taking care of about thirty children or more, and makes at least half of those beds. She has gained 12 pounds since then, and has had no vomiting since leaving the hospital.

She is a remarkable example of the amount of surgery possible for one person.

Scissors-Legs in an Adult Due to Osteo-Arthritis of the Hips. Radiograph.

B. B. Mosher, M.D.

I believe that scissors-legs in adult life comes on in the fifties. The patient I have to report on is a woman 55 years of age, the wife of a physician, who was referred to me owing to a disability in walking and pain in the hips. The examination of the patient showed a woman well developed physically, but unable to walk except by crossing her legs. She had a blood pressure of 210 and no other symptoms of rheumatism except a diminution in the motion at the hips (both of the joints). There was practically very little excursion of the head of the femur and the X-ray showed the cause of the scissors-legs to be an osteo-arthritis, which made it impossible for her, owing to the mechanical process, to get her feet far enough apart so that she could walk without being cross-legged.

The report of Dr. Eastmond on this case is as follows:

"*X-ray Findings.*—Examination of the lower lumbar vertebræ and sacro-iliac joints fails to reveal any evidence of difficulty sufficient to appear on an X-ray plate.

"Examination of the left hip shows practically an absence of any intra-articular space together with distortion of the head of the femur and the presence of a large quantity of new bone formation about the acetabulum and neck of the femur.

"The right hip presents practically the same condition except that there seems to be slightly more displacement upward of the femur produced by the absorption of the head.

"*Diagnosis.*—A study of the X-ray plates of Mrs. N— justifies the diagnosis of an osteo-arthritis of marked degree with destruction of the cartilages and the formation of a large quantity of new bone tissue."

Marked Apparent Shortening of the Leg Due to Osteitis Following Fracture of the Neck of the Femur. X-Ray.

B. B. Mosher, M.D.

The next case might have been reported as a scissors-leg on one side. The one leg could not be carried far enough out owing to the shortening of the neck of the femur.

The history is that of a woman who three years ago fell on a floor and was treated for a bruise with lameness since. There was less than one-half inch of shortening. The patient was unable to walk without a very great deal of limping, owing to the fact that she could not abduct the leg by reason of the mechanical obstruction due to an absorption of the neck of the femur which, I think, is shown in the picture better than the plate. The patient was 31 years of age.

Two Cases of Marked Sacro-Iliac Relaxation. X-Rays.

B. B. Mosher, M.D.

The next case shows a marked relaxation of the sacro-iliac joint in a man 60 years of age, one of the big golf players, who never had pain until about six weeks ago, when he began to have pain in the loin, running forward over the hip. He was practically confined to his bed for a few days and then was able to get around, and the only relief he got was from strapping the hip or putting a belt around. An X-ray plate was taken rather to see if there was trouble with the kidney, as well as to examine the sacro-iliac joint. The plate shows a rather marked relaxation on the right side. The picture, of course, is transverse and it shows it on the left side. I have another case of marked relaxation of the sacro-iliac joint, but it does not show well in the plate; but Dr. Eastmond gave me a report on it as follows:

"Patient, Miss M., 40 years of age.

"*X-ray Findings.*—The right hip joint presents no abnormalities or variations from the normal, except that there is a diminution of the intra-articular

space in the upper internal part of the joint. This is indicative of cartilage absorption and would bespeak an atrophic state.

"The left hip joint presents no abnormalities, except that there seems to be a slight general decalcification of the lower part of the acetabulum.

"Examination of the lumbar spine and lumbosacral region shows a marked diminution of the angle formed by the lateral margin of the body of the fifth vertebra and the ilium of the left side. There is also practically an absence of the transverse process of the fifth lumbar on this side.

"The upper part of the left iliac synchondrosis shows a marked increase in the breadth of the intra-articular space.

"The lower margin of the sacrum on the left side is prolapsed in its relation with the ilium.

"There is an apparent shortening of the vertical diameter of the sacrum.

"*Diagnosis.*—A study of the X-ray plates of Miss M. justifies the diagnosis of marked relaxation of the left sacro-iliac joint so that the left side of the sacrum is prolapsed and there is also a considerable degree of rotation of the sacrum forward on its transverse axis."

This case is of about three years' standing, and I report the two together because the first relaxation is absolutely relieved by pressure holding that joint together and the other case is not relieved; in fact, the patient is practically a cripple and has been for three years. There is no more deformity than the X-ray showed, but it emphasizes the point that you get a marked relaxation in the sacro-iliac joint sometimes without many symptoms, and again, with very little relaxation you get a lot of symptoms.

A Case of an Unerrupted Tooth. X-Ray.

T. B. Spence, M.D.

This is in reference to a patient that I operated on today. A lady of 60 a year ago began wearing a lower plate of false teeth and after two of three months she was seized with a very severe pain in the left side of the lower jaw. That went on and an abscess developed, which was opened. Nothing was found at the bottom of this abscess to cause it, but it failed to heal. A few months later she had an amputation of one of her breasts for carcinoma. I saw her about three or four weeks ago with a sinus of the left cheek. She was not suffering except mentally. She had gotten to be a recluse because she disliked to appear in public with a dressing on her face and it was really a serious thing to her. My guess on the thing was that she must have an unerupted tooth and I asked Dr. Eastmond to make a picture for me and I have this plate here which shows the tooth.

This morning I took out the tooth, which I have here.

I think that it is very strange indeed that that tooth should not have caused trouble until the woman reached the age of 60. I have seen only a few of these cases, but they have all given trouble in the early twenties.

Scissors-Legs in an Adult Due to Osteo-Arthritis of the Hip. X-Ray.

B. B. Mosher, M.D.

DR. WALTER TRUSLOW, in opening the discussion, said:—"This is an interesting deformity. The question of the etiology of a case of this kind is of a good deal of interest. Recently, I saw a case which had been in one of the hospitals for a long while, practically over a year, first, because of severe typhoid fever, and then because of an attempt, on the medical side, to do something for the hip stiffness. After exclusion of other etiology, the stiffness seemed to be due to the typhoid fever.

"I saw the patient, a young woman of about 20, at one of the dispensaries about a year and a half after the onset of the typhoid, or about a half year after she had left the hospital, where she had been so long. The scissors gait was marked in both thighs. A careful examination of the position showed each thigh adducted as much as 5 or 10 degrees from its anatomical position, so that she could walk only by a kind of hitch with a change of position of the entire body.

"I had planned to do the Roberts' operation on one side first—the taking of an astragalus from some case of infantile paralysis where the donor could give such an astragalus—and putting it in as a new head of femur. Perhaps fortunately for the patient, I was ill at the time when the operation was to have been performed. At any rate, it was not done and the patient has since been in the gymnasium of the Brooklyn Hospital Dispensary and by manipulation there she is getting a good deal of motion.

"To go back to the etiology, these things may occur from many different forms of inflammation, and where it is double, it may be a very severe disability."

DR. MATHIAS FIGUEIRA, in discussion, said:—"I think that whatever the

etiology may be, these cases are due to want of care in keeping the limbs in proper position during disease and the same thing happens here as in any other joint disease if you are neglectful to keep the limbs in proper position. The same thing happens in infantile paralysis. The same thing happens in other joint diseases when the limbs become deformed and displaced on account of the contraction of the muscles not being properly counteracted by splints. I think that in all these cases people would get well, without deformity, if the doctor at the time had used the proper means to keep the limbs in position and prevent contraction and displacement."

Two Cases of Marked Sacro-Iliac Relaxation. X-Rays.

B. B. Mosher, M.D.

DR. WALTER TRUSLOW, in opening the discussion, said:—"I am glad that Dr. Mosher could present the second case as well as the first. There is no question but that these relaxations of the sacro-iliac joint are the cause of a great deal of discomfort and to more patients than we realize. The strain of the golf player is one of the causes. In my experience, the 'drive' (I mean a very strenuous drive) of the golf player produces it. Many times the patient can recall a definite strain. I know of several physicians who have had this from the cranking of an automobile; others from sudden heavy lifting.

"Dr. Mosher spoke of the second case in which the relief is not always possible from the usual strapping. Strapping and the use of the belt generally bring relief of pain. There are some cases in which it is possible so to manipulate as to reduce the real dislocation that may occur between the sacrum and the ilium. There are times when that fails and the patient, as in Dr. Mosher's case, becomes practically an invalid. But this is rare. Sometimes that manipulation has to be given under an anesthetic. One cannot definitely describe what that manipulation is, but a little study of the patient's posture will give the indication for manipulation. To relieve these patients of the great discomfort that they feel in the lower back is doing them a great service."

DR. MATHIAS FIGUEIRA, in discussion, said:—"In considering these cases of sacro-iliac disease I think that it is good and proper for the surgeon to keep in his mind the two main varieties of this disease that we meet with. There is one form that may be due to cold or a sprain and that is the form that is relieved by treatment and by bandaging and certain other things, but there is the sacro-iliac disease that is due to tubercular trouble, which in its incipency resembles the other form very much, only the means that relieves one form will not relieve the other. The sacro-iliac disease due to tuberculous trouble will go on and eventually will develop into tubercular disease of the joint, with abscess and many times destruction of the joint and death of the patient from other tuberculous lesions developing as a consequence of it. I have seen cases of sacro-iliac disease in which doctors used all these means, plaster Paris and one thing and another, and eventually an abscess formed and it proved to be tubercular disease of the sacro-iliac joint; so in all these cases it is well to keep in mind the possibility of this condition being present, especially when the common means of treatment fail to cure."

DR. B. B. MOSHER, in closing the discussion, said:—"I have nothing to add except to just thank the gentlemen for their discussion. I might, however, say that in the case of the scissors-legs she had been under treatment in the various institutions in the country for five years. I think that every watering place had had her for treatment and I find that most of these cases that come to us after they have been going the 'rounds' have already had osteopathic experience, and you don't have to try the thing Dr. Truslow suggested. Of course, the report of those cases was simply a relaxation of the sacro-iliac joint and not intending to say anything about the possible disease, the tubercular disease of the joint."



Anna

